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ANNOUNCEMENT
of the
COLLEGE OF PHARMACY
1914-1915



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Calendar.

1914

September 1—Tuesday, Fall Session begins.

November 26—Thursday, Thanksgiving Day. Holiday.

December 23—Wednesday, Christmas Recess begins.

1915

January 4—Monday, Winter Term begins.

February 8—Monday, Founders' Day. Holiday.

February 22—Washington's Birthday. Holiday.

July 31—Saturday, Junior Course ends.

Faculty

EUGENE A. MAGEVNEY, S. J. The Creighton University
President of the University.

WILLIAM P. WHELAN, S. J. The Creighton University
Lecturer on Moral Principle in Pharmaceutical Practice,
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PAUL L. MARTIN, A. M., LL. B. . . . Creighton College of Law
Lecturer on Pharmaceutical Law.

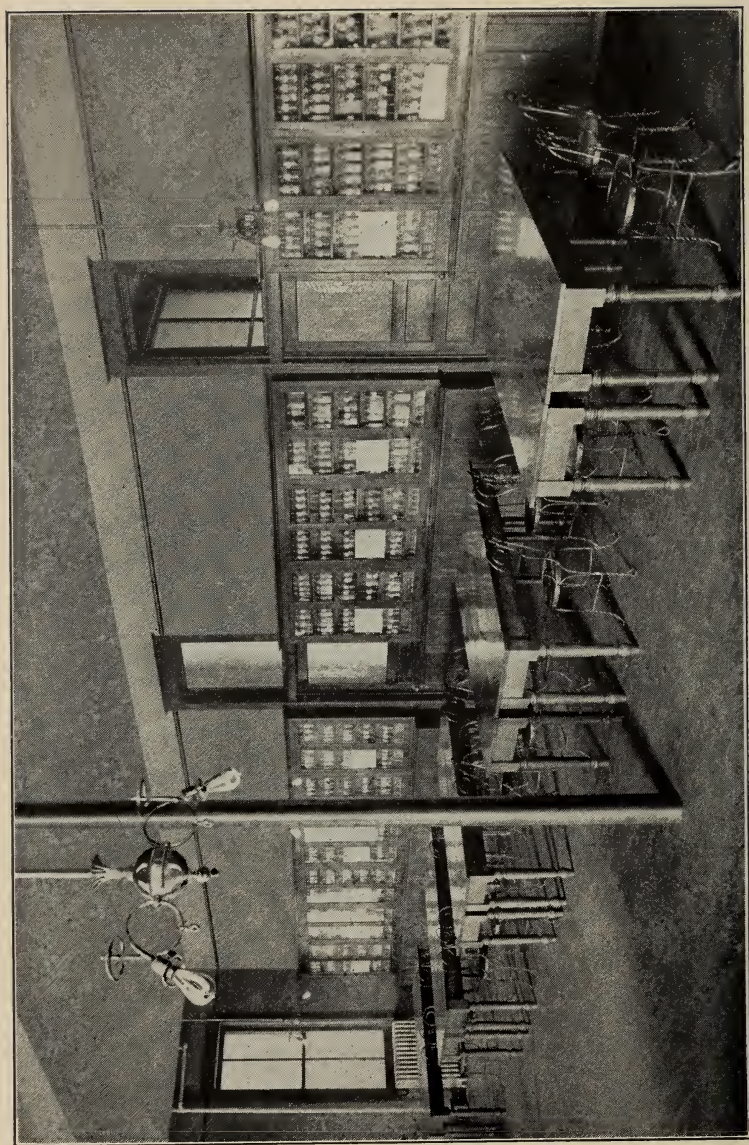
T. BOLER, M. D. City National Bank Building
Lecturer on First Aids in Emergencies.

FLOYD HARLEY, Ph. G. Creighton College of Pharmacy
Instructor in Arithmetic and Chemistry.

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Associate in Pharmacy.



Creighton College of Pharmacy.



Creighton College of Pharmacy—Library and Museum.

Creighton College of Pharmacy

The Creighton College of Pharmacy, formerly the Omaha College of Pharmacy, became a part of The Creighton University September 1, 1905. The school has enjoyed a rapid growth from the first and now ranks with the leading colleges of pharmacy in the country.

The building occupied by the College of Pharmacy adjoins the Creighton Medical College on the west, and is located at Fourteenth and Davenport streets. It is one of the finest and most completely equipped buildings of its kind. It will provide ample accommodations for the growing school for many years to come. On the first floor is a lobby which is equipped with steel lockers for the use of the gentlemen students. The ladies' rest room is also on this floor. It is furnished with every convenience for the comfort of the lady students. The museum and library occupies the large room at the back on the first floor. The library contains a choice selection of standard books upon pharmaceutical and chemical subjects. It also contains a complete set of the reports of the American Pharmaceutical Association from the time of its organization in 1852. This is a complete library of pharmaceutical literature in itself. All the leading pharmaceutical and chemical journals are kept on file.

The museum contains collections of all the materials used in pharmacy in the various forms in which they are found upon the market, from the crude condition to the prepared product as used in medicine. One of the finest collections in this room is one of every drug, chemical, and pharmaceutical preparation contained in the United States Pharmacopoeia. It is literally the United States Pharmacopoeia illustrated. This collection is open to the use of the students for study and much valuable information is gained from it.

On the second floor is a faculty room, two large lecture rooms, and a private laboratory for the use of the faculty only.

The third floor contains the general stock room and the pharmaceutical and chemical laboratories. These laboratories are fitted with every convenience for practical work and provide space for one hundred and forty students to work at one time.

The Demand for Educated Pharmacists.

A pharmacist is one who is skilled in the art of identifying, preparing, preserving, testing, and dispensing medicinal substances. A physician is one who is versed in the treatment of diseases by the use of medicine. The physician prescribes the remedy to be used, but the pharmacist prepares and dispenses the same. To properly prepare all medicinal substances in such a manner that their use as remedial agents shall produce the desired results requires a high degree of skill. Skill involves two things: First, knowledge, and, second, manual dexterity in execution. The most important factor in acquiring skill in the practice of pharmacy is the acquisition of technical knowledge. Knowledge comes by study and by observation, while ability to do comes through practice.

There are only two ways by which one can acquire the necessary amount of skill for the successful practice of pharmacy. One is by taking a systematic course in a college of pharmacy, and the other is by serving a long apprenticeship in a store and devoting much time to private study. The great majority of those who attempt to qualify themselves by the latter method find it a very discouraging process. A young man or woman upon beginning work in a drug store without any knowledge whatever of the materials with which he or she is expected to work, makes progress very slowly indeed. They must necessarily be assigned to a kind of work that any ordinary clerk in a general merchandise store can do, while they are forced to acquire a knowledge in a very discouraging way. They spend a number of years before they are able to acquire the knowledge necessary to enable them to become registered pharmacists. On the other hand, those who take a course in a good college of pharmacy before taking up the work in a store, are in possession of such professional or technical knowledge as will enable them to do anything required to be done in first-class pharmacy. They know the names and are familiar with the drugs and chemicals, their properties

and their method of preparation, uses, and tests. They soon become as proficient in their work as those who have devoted years to the profession.

The pharmacist occupies so important a position between the physician and the patient that the public has a right to demand that he shall be skilled in his art. His services are of as great importance as are the services of a physician, and the responsibility resting upon him is as great as the responsibility resting upon the physician. The physician must show evidence of special training for the practice of medicine before the State will permit him to engage in such practice. Likewise the State requires every one who desires to practice pharmacy to show special fitness for such work by passing a more or less rigid examination, or by giving evidence of having completed a course of training in some good college of pharmacy. Some States require the candidate for examination to be a graduate of some recognized college of pharmacy. In due course of time the requirements of those who desire to practice pharmacy will be as exacting as they are for those who desire to practice medicine. Rapid strides are being made in respect to elevating the practice of pharmacy to the rank of a profession and in removing it from the position of pure commercialism. Important legislation has recently been enacted by the general government, and by many State governments fixing the standard of purity of drugs and of foods. This legislation has created a large demand for those specially qualified as inspectors. Such legislation is certain to be followed by that requiring a much more thorough preparation for those who desire to engage in this line of public service, as well as for those desiring to engage in the business of a retail pharmacist.

Pharmaceutical Chemists Course.

This course has been introduced to meet the demands of many who wish to qualify as Commercial Chemists or Food and Drug Analysts. All who enroll in this special course take the regular work for the first fourteen months, and after the successful completion of it, they are given special instruction for eight months in Bacteriology, Manufacturing Chemistry and Analytical Chemistry. Special attention is given to the analysis of foods and drugs, so that the student may be prepared to qualify for a position as government chemist. To all who

successfully complete this course the degree of Pharmaceutical Chemist is given.

Course of Study.

The course of study requires two terms for completion and leads to the degree of Graduate in Pharmacy. The first or Junior Course is eight months. The Senior Course is six months. Two Junior Courses are given each year, one beginning about September first and closing in May, and the other beginning about January first and closing in July. Two Senior Courses are given each year; one beginning about September first and closing in March, the other beginning in October and closing about the first of May. By this arrangement those who take up the Junior Course in September have vacation during May, June, July and August. Those who begin the Junior Course in January work through the Summer, finishing the Junior Course in July, and then take up the Senior Course in October. By arranging the courses in this manner those who do not wish to attend school during the Summer months can begin the Junior Course in September. About eighteen hundred hours of actual classroom and laboratory work are required in the course. The training acquired qualifies the graduate to pursue successfully any branch of pharmaceutical work or ordinary chemical analysis. The course embraces practically all the work that is ordinarily given for the degree of "Pharmaceutical Chemist." See the detailed description for summary of work covered in each subject.

The course is arranged in a progressive manner. The subjects taken up at the beginning of the term lay the foundation for the subjects that follow. Although lectures are given daily, the students are required to study the lessons before they are taken up in class. Then by question and explanation the instructor fixes the principles upon the student's mind in such a way that the knowledge he obtains is of practical benefit to him. All laboratory work is done under the immediate supervision of the instructor.

Subjects Taught in the Course.

JUNIOR YEAR—Eight Months.

Inorganic Chemistry, five hours per week for thirty-two weeks.

Experimental Chemistry, ten hours per week for sixteen weeks.

Qualitative Analysis, ten hours per week for sixteen weeks.

Physics, five hours per week for eight weeks.

Pharmaceutical Latin, five hours per week for eight weeks.

General Pharmacy, five hours per week for sixteen weeks.

Botany, five hours per week for eight weeks.

Microscopy, four hours per week for eight weeks.

Materia Medica, five hours per week for sixteen weeks.

Pharmaceutical Arithmetic, five hours per week for sixteen weeks.

Physiology, five hours per week for sixteen weeks.

Total, 952 hours in classroom and laboratory.

SENIOR YEAR—Six Months.

Manufacturing Pharmaceutical Chemistry, ten hours per week for sixteen weeks.

Dispensing, ten hours per week for eight weeks.

Pharmacy, five hours per week for twenty-four weeks.

Materia Medica and Therapeutics, five hours per week for twenty-four weeks.

Toxicology and Posology, two hours per week for twenty-four weeks.

Organic Chemistry, three hours per week for twenty-four weeks.

Quantitative Analysis, ten hours per week for sixteen weeks.

Drug Assaying, ten hours per week for eight weeks.

Commercial Training, two hours per week for twenty-four weeks.

Special Dispensing in the Free Dispensary of the College of Medicine, twelve hours per week from six to eight weeks for each student.

Total, 784 hours in classroom and laboratory.

Inorganic Chemistry.

The science of chemistry lies at the foundation of a course in Pharmacy. Without a scientific knowledge of chemistry one cannot intelligently overcome the numerous difficulties that arise in compounding and dispensing. The subject is taken up in the most elementary manner. Consideration is first given to the general properties of matter and the laws governing the form and state of existence of the same. The relationship of atoms and molecules, atomic and molecular forces, physical and chemical changes, elementary and compound substances, are carefully studied. The subject is taught by lecture, recitation and by experimentation. Numerous experiments are performed by the instructor illustrating the principles studied in the classroom. Each student performs a great variety of experiments in order to become thoroughly familiar with the characteristic properties of the substances studied. The non-metals and their characteristic compounds are studied first. Due attention is given to the nomenclature of acids and the salts derived from them. The metallic elements are studied in the order of their arrangement in the Periodic System. Numerous examples illustrating every kind of chemical problem are given. Much practice is given in writing chemical equations. The course continues thirty-two weeks, five hours per week.

Organic Chemistry.

The course in Organic Chemistry continues through the entire Senior year. It includes a study of the source of organic compounds, their properties, purification, proximate and ultimate analysis, determination of melting and boiling point, homology, isomerism, destructive distillation, combustion, decay, fermentation, determination of formula from result of analysis; structural, graphic and molecular formula, etc.

The organic substances are classified and studied under the following heads: Hydrocarbons, halogen derivatives of hydrocarbons, alcohols, aldehydes, acids, ethers,—simple and compound,—ketones, fats, soaps, carbohydrates, glucosides, cyanogen compounds, mercaptans, benzene and benzene derivatives as mono, di, and trihydroxy compounds, the

aldehydes, acids, terpenes and their derivatives, diazo compounds, pyridin bases, animal and vegetable alkaloids, complex synthetic compounds as phenacentin, antipyrine and acetanilid, amines, amides and all other organic substances of pharmaceutical interest. Lectures on the commercial industries of sugar-making, brewing, soap-making, gas-making and fermentation industries are given at appropriate times during the course.

Experimental Chemistry.

This course gives the proper use of apparatus, methods of manipulation, and prepares the way for Analytical Chemistry.

The work in Inorganic Chemistry in the classroom is supplemented by practical work in the laboratory. Each student is supplied with a full set of apparatus and all chemicals necessary for performing all experiments which will aid him in understanding the principles taught. Sufficient direction is given the student to enable him to successfully perform any experiment. He is then required to perform the experiment, make his observations and draw his conclusions. It is in this work that independence of thought is developed. Full notes are made upon all experiments performed and the same are carefully inspected.

Qualitative Analytical Chemistry.

The course teaches the proper use of apparatus, methods of manipulation, and prepares the way for the more important work of Analytical Chemistry and Pharmaceutical Manufacturing.

This course follows the course in Experimental Chemistry. It is begun with a general description of the operations, apparatus used and with the proper classification of the elements and compounds for the purpose of qualitative analysis. The action of the group reagents upon solutions of all the common base-forming elements is determined by experiment. The bases are then classified into groups. The methods of separation of the bases of each group is studied in connection with solutions of known composition. Full record is required to be made of each step as to the substance used, the reagent, the result, the inference and the compounds formed. All reactions are required to be represented

by equations. Work with solid and liquid substances of known composition is continued until such time as the student becomes thoroughly familiar with the principles involved. Acid radicals are studied in the same systematic manner as are the bases. Substances of unknown composition are then analyzed and their composition determined. The student is required to make a stated number of correct analyses before he is given credit for the course.

The course in Inorganic Qualitative Analysis is followed by a course in Organic Qualitative Analysis. The course not only fits the student for practical analytical work, but rules and principles are developed which greatly aid in Manufacturing Chemistry and in Dispensing. It also prepares for the systematic testing of the purity of commercial chemicals and pharmaceutical products.

Quantitative Chemical Analysis.

This course extends through ten weeks, sixteen hours per week. It includes work in gravimetric analysis, illustrating all principles of that branch of quantitative analysis; and in volumetric analysis, illustrating the care, use, and calibration of apparatus, principles of standard solutions, and in making and standardizing volumetric solutions of all kinds. Much practice is given in acidimetry, alkalimetry, oxidation and reduction, analysis by precipitation, and in gasometric analysis. The course is followed by a course in Drug Assaying.

Physics.

This subject is taken up at the beginning of the Junior Year because of the important relation it bears to Chemistry and to Pharmacy. A knowledge of the elementary principles of Physics is essential to a clear understanding of these subjects. The principal topics treated are matter, force, molecular theory of structure, states of matter, properties, weight, cohesion, adhesion, capillarity, diffusion, osmose, dialysis. Mechanics of fluids as under: Fluidity, viscosity, pressure within liquids, transmission of pressure, conditions of equilibrium, the barometer, pumps and condensers, Boyles Law, the syphon, buoyancy, density and specific gravity. Under heat we study source, temperature, the thermometer and

relationship of various thermometers, conduction, convection and radiation, changes in state as produced by heat as liquefaction, vaporization, distillation, sublimation, specific heat, etc. The important principles of light and electricity are also considered.

Latin.

No one can thoroughly understand the official nomenclature of the materials of medicine and pharmacy without some knowledge of Latin. It is also essential in correct prescription writing. No attempt is made to give a complete course in Latin, but the aim is to present the elements of the language in such a way as to enable the student to understand the structure of the Latin words, phrases, and abbreviations that are used in medicine and pharmacy.

The course is given immediately following the course in Physics and gives the proper foundation for the use of the language in the study of *Materia Medica* and Pharmacy. The course continues eight weeks. The text used is prepared especially for pharmacy and medical students, and contains no subject matter that is unprofitable for students of these subjects.

Pharmacy, Junior Course.

Pharmacy is taken up at the beginning of the Junior Course. The course is begun with a description of Pharmacopoeias, their origin, development, methods of revision, methods of arrangement, and with a history of the United States Pharmacopoeia. The National Formulary, Dispensatories, and other literature of Pharmacy are discussed. The sixteen weeks of the Junior Course, which is devoted to the study of pharmacy, is spent entirely upon General Pharmacy. The principles and construction of balances, their use, care, and methods of testing; heat and its source, methods of generation, regulation, measuring and its use in fusion, sublimation, calcination, distillation, evaporation, incineration, and torrefaction; mechanical division of drugs as under grinding, trituration, levigation, elutriation, precipitation, use of mortars, etc.; principles of the separation of volatile and nonvolatile substances, glycerites, etc., are carefully studied. The definitions of the National

Syllabus Committee are given the students and they are required to use them in their recitations. The balance of the Junior term is given to the study of the official salts.

Pharmacy, Senior Course.

The Senior Course in Pharmacy is a continuation of the work of the Junior Course and continues through twenty-four weeks, three hours per week in the classroom, supplemented by the work in the pharmaceutical laboratory, ten hours per week for twenty-four weeks. The course is comprehensive and thorough, as every class of official preparation is carefully studied, both in the classroom and in the laboratory. It includes a study of waters, liquors, decoctions, infusions, syrups, mucilages, honeys, glycerites, elixirs, spirits, tinctures, wines, vinegars, fluid extracts, resins, oleoresins, collodions, emulsions, mixtures, pills, lozenges, confections, effervescent salts, cereates, ointments, powders, triturates, liniments, oleates, plasters and suppositories.

The course also includes a careful study of the elements, hydrogen, oxygen, chloride, bromide, iodine, sulphur, phosphorus, carbon, boron and their compounds; also the compounds of sodium, potassium, lithium, ammonium, calcium, strontium, magnesium, aluminum, cerium, iron, manganese, chromium, mercury, antimony, arsenic, bismuth, copper, lead, zinc, gold, silver, and also the organic substances; cellulose, starches, gums, sugar, the coal tar products and derivatives of the same, alcohols, fats, fixed oils, essential oils, organic acids, glucoses, alkaloids, neutral principles and the animal products. A few weeks are devoted to the study of the National Formulary and non-official preparations. The course closes with a thorough study of the prescription, the various kinds of incompatibility, solubility of ingredients, pricing, and abundant practice in the reading of difficult prescriptions taken from the actual prescription files of the city stores.

Manufacturing Pharmaceutical Chemistry.

This course is supplementary to the class work in pharmacy and embraces about three hundred and twenty hours of laboratory work. It follows closely the order of instruction in pharmacy. Each student is

supplied with a full set of apparatus for carrying out all the important processes in pharmacy. The college furnishes all chemicals free of cost to the student. The work is carefully supervised by the instructor who spends the whole period of laboratory work with the class, giving all necessary directions as to the best methods of manipulations, etc. It includes practice in the use of every form of pharmaceutical apparatus, such as thermometers, hydrometers, pycnometers, balances, burners, drying ovens, steam baths, water baths, distilling apparatus, etc., etc. The students are required to save a sample of each preparation, which becomes his property upon the completion of the course. Each sample is carefully inspected by the instructor, and if found to be unsatisfactory the student is required to repeat the process until a product is obtained which will meet every requirement. Every important pharmaceutical product as enumerated in the remarks upon the Course in Pharmacy is prepared in the laboratory. The most difficult ones of each class are chosen for preparation. The preparations which come more particularly under the head of extemporaneous pharmacy are studied in the course of Dispensing, which is a continuation of the laboratory course in Manufacturing Pharmaceutical Chemistry.

Dispensing.

This course follows the course in Manufacturing Pharmaceutical Chemistry and continues eight weeks, ten hours per week. It is placed last in the course in order to give the student the benefit of all the knowledge acquired in the previous courses, in developing the most important and practical part of the pharmacist's art, the art of dispensing.

A careful study is made of the prescription as to its purpose, its parts, and the proper course of procedure upon receiving a prescription. Extensive practice is given in reading and criticising prescriptions of every character. The student is also required to write a number of typical prescriptions. A great amount of practice is given in filling prescriptions involving difficulties of every kind. The order for receiving, filing, checking, pricing and recording prescriptions in the Dispensing Laboratory is the same as is in use in the best prescription pharmacies. Full instruction is given as to the proper selection, care, and use of all materials used in dispensing. Methods of weighing, measuring, pasting

and labeling, wrapping, cleaning of utensils, arrangements of prescription case, etc., are all thoroughly taught by theory and by an abundance of practice.

Systematic instruction and an abundance of practice is given in making and dispensing the various kinds of mixtures, pills, emulsions, powders, suppositories, ointments, cereates, plasters, confections, lozenges, troches, cachets, konseals, hard and soft capsules, bougies, etc.

Most careful attention is given to incompatibility of every kind—therapeutical, pharmaceutical, and chemical—and the methods of overcoming the same. This course of instruction is supplemented by practice in our model prescription department, in which bona fide prescriptions for the patients of the free dispensary of the Medical Colleges are filled.

Practical Prescription Work.

All the prescriptions written for patients at the free dispensary of Creighton Medical College are filled by students of the College of Pharmacy under the supervision of one of the instructors. A model prescription department is fitted up especially for this work. The Senior Class is divided into small sections and each section does this practical work for a given period. Perhaps as great a variety of prescriptions is filled in this department each day as is filled in any one of the city stores, since a large number of the leading physicians of the city do work in the free dispensary. Students are required to make nearly all materials used in this department. It affords a large amount of practical experience which is of great value in business.

Pharmaceutical Arithmetic.

The course in Pharmaceutical Arithmetic extends through sixteen weeks, five hours per week, and is given in the Junior Course. The course is arranged to meet the needs of those whose mathematical training has been somewhat limited, and to give to all the necessary practice in solving problems which come up in the practice of pharmacy and in chemical analysis. The work is arranged in logical order and includes problems of weights and measures, specific gravity, specific volume, conversion and reduction of formulas, percentage problems of every kind,

dilution and fortification, alligation, problems involving chemical formulate and reactions, and numerous miscellaneous problems. On the whole it is one of the most helpful courses given.

Botany.

A knowledge of this branch is indispensable to a pharmacy student. The student develops the language needed in studying Pharmacognosy, Materia Medica, and Powdered Drugs. Instruction in this subject is given largely by recitations. A good textbook is used as an outline. The student is required to use plant specimens in preparing his lessons, and when convenient make botanical excursions into the country. Most time and attention are given to those parts that concern Pharmacognosy and Materia Medica. The morphology, ecology, histology, and plant physiology; the classification of roots, stems, and leaves; and the general classification of plants are all thoroughly canvassed.

Microscopy.

Each student is supplied with a compound microscope and other needed accessories. The student is taught how to manipulate the instrument; and also how to kill, harden, soften, section, clear, stain, dehydrate and mount specimens. As many as possible of the crude drugs are used in illustrating the microscopic structure of plant tissue. The cells, tissues, systems, and organs of the higher plants; some lower plants; many plant products such as starches, chlorophyl bodies, crystals, resins, gums, and gumresins are mounted, studied and drawn. The aim of the course is to teach the student how to detect adulterations in powdered drugs. It follows the courses in Pharmacognosy and Materia Medica. The microscopic structure of many pure samples of starches, powdered spices, leaves, stems, roots, barks, roots and rhizomes, resins, etc., are studied as standards. Other physical properties, such as color, taste, odor, etc., are associated with the microscopic appearance. This qualifies the student to pursue the study of adulterated drugs.

Pharmacognosy.

This branch embraces the study of crude drugs and is taken up subsequent to Microscopy. Each student is equipped with a set of crude

drugs that he takes to his room. Important drugs get most consideration. The school possesses several complete sets of drug samples. One set contains every specimen in the United States Pharmacopoeia. The students have access to this set at all times. Several wholesale drug houses have donated to the school samples of crude drugs. The drugs are studied in botanical order one hour a day for two months.

Materia Medica and Therapeutics.

Instruction in these branches is given by lecture and recitation. The United States Pharmacopoeia vegetable drugs are first taught, then the animal, the inorganic, and finally some important unofficial drugs. The vegetable and animal drugs are studied in botanical and zoological order. As the student's knowledge of Materia Medica becomes more comprehensive, attention is given to the arrangement of drugs according to their therapeutic effect. The official definition, natural order, botanic source, synonyms, habitat, part used, active principles, action and uses, official preparations and dose of each vegetable drug are learned. Similar outlines for the animal and inorganic drugs are followed. The United States Pharmacopoeial dose is taught for important and potent drugs.

Toxicology.

This is a subject of great importance to the physician, the pharmacist, and the public. The public has a right to demand of the pharmacist such a knowledge of poisons as to enable him to guard against any possible errors in prescriptions. All candidates for license to practice are required to pass an examination in toxicology. The pharmacist is expected to be competent to afford prompt and intelligent treatment in cases of accidental poisoning. The poisons are classified into true, corrosive, and cumulative. The symptoms, antidote, and treatment are carefully studied. The methods of detection and test are given in connection with the course in Physiological Chemistry and Drug Analysis.

Drug Assaying.

This course is a continuation of the course in Quantitative Analysis. The work includes analysis of the following drugs by the methods of the United States Pharmacopoeia and modifications of these methods; bella-

donna, leaves of root, and some preparations of belladonna; cinchona for anhydrous and other soluble alkaloids, and fluid extract of cinchona; cocoa; colchisum corm and seed; conium, hydrastis, ipecac, nux vomica and some preparations, opium and some of its preparations. The course is thoroughly practical and teaches the student to be able to confirm the strength of all potent drugs.

Pharmaceutical Testing.

Qualitative and quantitative tests are made for purity and identity of inorganic acids and compounds, the organic acids and salts of organic acids, alcohol, ether, chloroform, phenol, the estimation of the iodine value and saponification value of fixed oils, assay of essential oils, pepsin and pancreatin, scale salts, tests for purity and identity of alkaloids, acetanilid, prenacetin, sulfonal, antipyrin, and many other organic compounds.

This course fits the student for the analysis of any pharmaceutical product and lays the foundation for the practical commercial chemical analysis.

Physiology.

Every intelligent pharmacist should be acquainted with the structure and functions of the organs of the body. He may then better understand the action of drugs on the system. The relation between the action of drugs and Physiology is made clear to the beginner by teaching in connection with the Physiology the action of such drugs as emetics, astringents, cathartics, carminatives, etc., as illustrations. Instruction is given by recitation and lecture. Only those parts of the subject considered of practical importance to the student are extensively taught. The subject is illustrated by specimens, manikins, and skeletons. Special lectures are given on hygiene by eminent doctors of the medical faculty. Instruction is given five hours per week for sixteen weeks.

Physiological Chemistry and Urinalysis.

This course continues six weeks, ten hours per week, in the laboratory. It is supplementary to the course in Physiology in the classroom.

In it is taken up in the chemistry of the carbohydrates, such as dextrose, insonite, cane sugar, milk sugar, maltose, starch, glycogen, and cullulose; of fats as to composition, decomposition, saponification, and emulsification; of proteids as to classification, and the physical and chemical properties. Attention is given to the chemistry of foods, as milk, meat, eggs, flour, and the changes they undergo when cooked, and of the action of the saliva, the gastric, pancreatic and intestinal juices and their respective ferments; and of the bile and the blood.

In Uralysis attention is given to the normal constituents, their tests and variation in disease, and to the abnormal constituents, their signification and tests. The microscope is also used in the detection of the abnormal constituents. Both qualitative and quantitative tests are given whenever both would be of value in a diagnosis of the condition. This course fits the student for practical uralysis.

First Aid in Emergencies.

In connection with the course in Physiology is given a course in "First Aid to the Injured." It is a natural thing for all to rush to the nearby drug store for assistance in case of an accident of any kind. Pharmacists should be familiar with the most simple and effectual means of handling all kinds of accidents until the physician can be procured. A course in "First Aid" is given in order to make the students familiar with the best methods of procedure. This course is given in the form of lectures and by practical illustration both in the college and in the hospital. What to do in case of "Bleeding," "Fractures," "Fainting," "Drowning," "Bites of Animals," "Poisoning," etc., receive careful study. This course is not intended to fit the pharmacist to take the place of the physician, but simply to teach him what should be done until the physician or surgeon can be obtained. The life of the injured very frequently depends upon what is done upon the immediate occurrence of the accident. This course meets a pressing demand and is pursued with the greatest interest and profit.

Commercial Training.

A short course is given in which the students are taught the proper form and use of all kinds of commercial paper; as notes, drafts,—

foreign and domestic,—checks, bills, statements, invoices, inventories, etc. They are taught the most improved and labor-saving methods of keeping the necessary records of their business. This is as important an element of the pharmacists's training as is the instruction in pharmacy proper.

Special Work.

Students who are able to give only a portion of their time to their studies may take such branches as they desire and devote the remainder of their time to other work. Those who adopt this method will require a longer time to complete the course, but many will be thus enabled to take the work who otherwise would not be able to do so. No special course preparatory to State Board Examinations is given. Students will not be enrolled for less than a full term; neither will they be permitted to take a State examination before the term for which they have enrolled has been finished.

Examinations.

Regular monthly examinations are held in each branch in addition to the drills and class tests that are given from time to time in the regular course of the work. Record is kept of these monthly examinations and these records form a part of the final standing of the student. These regular examinations are a great help to the student in giving him opportunity to use the knowledge acquired and in teaching clearness of expression. A final examination must be taken in every branch before credit will be given for the completion of that particular study.

Entrance Requirements.

No one should undertake the study of pharmacy who has not, at least, one year of high school. A complete high school course is a great advantage, but one year high school is all that is required for entrance. For the degree of Pharmaceutical Chemist four years high school are required.

Time to Enter.

All students should be present at the beginning of the session in September or in January, as only at these two times are classes started in

beginning work. Students who enter in September will finish the Junior Course the following May. They will have a vacation during the Summer months and take up the Senior Course in September, the second year. The Senior Course is completed in six months, or about the first of March. Students who enter in January pursue the course, with a two months' vacation in August and September. Those who enter after the session has begun must take up all back work in order to receive full credit for the work of the course, otherwise they will receive credit for the actual time in attendance.

Requirements for Graduation.

Every person upon whom this college confers the degree of Graduate of Pharmacy must be of good moral character and have reached the age of eighteen, and have all previous conditions removed. Evidence must be furnished that the candidate has attended a full course in some reputable College of Pharmacy, the last school year of which must have been in this college, and they must satisfactorily pass all final examinations. An attendance of ninety per cent. is required.

Text Books.

The textbooks in regular use are as follows: Remington's Pharmacy, Burgen & Davis' Botany, Simon's Chemistry, Leffman and La Wall's Organic Chemistry, Wilcox's Materia Medica, Sturmer's Pharmaceutical Arithmetic, Sturmer's Pharmaceutical Latin, Brundgage's Toxicology, Hough and Sedgwick's Physiology, United States Pharmacopoeia, and the National Formulary.

Following are the most important reference books used in the work: The National Standard Dispensatory, the United States Dispensatory, Remington's Practice of Pharmacy, Colblentz's Pharmacy, and many other standard works on Pharmacy, Materia Medica, and Chemistry. All textbooks may be obtained at the college, though no one is required to purchase here. The college will also purchase such second-hand books as are used in the regular course of the work when students desire to dispose of the same.

Expenses and Deposits.

A Matriculation fee of \$5.00 is charged. This is payable but once and is never refunded. There is also a fee of \$5.00 per year covering general admission to the University Athletic Events, Glee Club Concert, Debate, College Play and subscription to the Chronicle, the University's official monthly publication. The tuition for the Junior Course is \$100.00, payable \$50.00 at the time of entrance and \$50.00 at the beginning of the second half of the Junior Course. The tuition for the Senior Course is \$40.00, payable at the beginning of the course. Students who have taken their Junior Course at other colleges are required to pay \$60.00 tuition for the Senior Course. Special arrangements may be made when it is not convenient to pay the tuition as indicated above. No laboratory fees are charged aside from a deposit of \$5.00 to cover breakage. Any unused portion of this deposit is refunded at the time the student leaves the school. The graduation fee is \$10.00, payable at least three weeks before Commencement.

No tuition is refunded, but in case a student is compelled to leave school before completing the term for which he had enrolled, credit will be given for the unused portion.

If a student does not do his duty or if he conducts himself in a manner not approved by the authorities of the school, he will be suspended or expelled and no tuition will be refunded.

Employment.

The college will do all it can to secure employment for students who desire assistance. It will assist all who desire to defray a portion of their expenses while attending college in securing places to do relief work in stores, to act as waiters in restaurants, hotels, etc. All who desire such positions will be accommodated.

Valuable assistance will be given the graduates in securing permanent positions for them. We have many more calls for competent help than we can supply.

Board and Room.

Good rooms and board may be had, together or otherwise, near the college at reasonable rates. A list of reliable places is kept at the

college office, and students are assisted in finding satisfactory places. Those who come from a distance should not engage room or board before they come to the college office unless they are acquainted in the city and understand fully the conditions.

Good rooms, including heat, light, etc., may be had for from \$1.00 per week to \$1.50 per week. Table board with private family will cost from \$3.00 to \$4.50 per week. Many students get board and room for \$17.00 per month.

Special University Privileges.

Students of pharmacy may take advantage of several Literary, Debating and Oratorical Societies, conducted under the supervision of members of the University Faculty, and they may receive individual help, just as students of the Classical Department do.

General Information.

To reach the college from the Union or Burlington Stations, take a Dodge street car and get off at Fourteenth street. Walk two blocks north to the college at the corner of Fourteenth and Davenport streets. The college is situated three blocks south and one block east of the Webster Street Station. Bring baggage checks to the college office and you can secure your room before having your baggage removed from the depot.

Students arriving in the city at night should go to some good hotel and report to the college next day. School is in session five full days in the week. The time required at school is from six to seven hours per day, in recitation and laboratory work. Lessons must be prepared outside of these hours.

The State Board of Examiners usually holds its February examination at the college. This gives all the graduates who have had the necessary experience an opportunity of taking this examination without any inconvenience.

Students of the College of Pharmacy are welcome to take part in all athletic privileges offered by the University. They also have the

privilege of using the large library of Creighton University and of joining the Orchestra, Band, Glee Club, and Choir.

Frequent visits are made during the year to many large manufacturing plants in the city. A great amount of practical information is gained by these visits.

For further information concerning the College of Pharmacy, address, The Dean, 14th and Davenport Streets, Omaha, Nebraska..

For information concerning the other colleges of the University, address—

The Dean, Creighton College of Law, 210 South 18th Street.

The Dean, Creighton College of Medicine, 14th and Davenport Streets.

The Dean, Creighton College of Dentistry, 210 South 18th Street.

The Dean, Creighton College of Arts, 25th and California Streets.

Following is a list of students for the year 1913-14:

SENIORS.

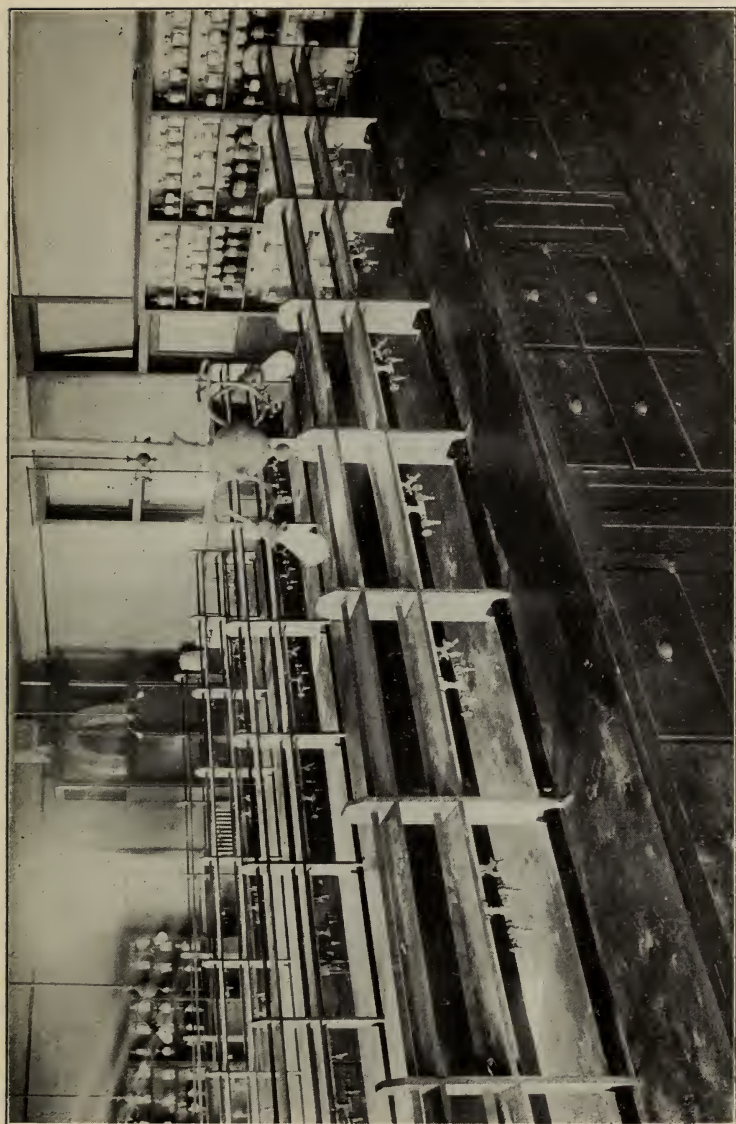
Beaman, R. R.....	Ceresco, Nebraska
Bills, J. L.....	Shelton, Nebraska
Bobeck, C. J.....	South Omaha, Nebraska
Bradshaw, H. L.....	Germantown, Nebraska
Brown, E. F.....	Creston, Nebraska
Burns, C. E.....	Columbia City, Indiana
Chase, C. H.....	Schuyler, Nebraska
Curry, G. M.....	Elk Point, South Dakota
Daniels, T. H.....	Tekamah, Nebraska
Danielson, C. A.....	Omaha, Nebraska
Deetken, A. M.....	Deadwood, South Dakota
Donaldson, H. D.....	Wakefield, Nebraska
Dusek, Joseph.....	Minitare, Nebraska
Euler, C. F.....	Blair, Kansas
Evans, J. E.....	Bellmont, Illinois
Griffin, F. A.....	Selby, South Dakota
Greusel, F. B.....	Lincoln, Nebraska
Hayes, Genevieve.....	Franklin, Nebraska
Hertert, E. G.....	Pierce, Nebraska
Hermansky, E. J.....	Omaha, Nebraska
Hiber, F. J.....	Plattsmouth, Nebraska
Highley, E. W.....	Edgemont, South Dakota
Hingst, J. H.....	Emerson, Nebraska
Huebner, H. M.....	Hot Springs, South Dakota
Jarvis, A. W.....	Pocahontas, Iowa
Jensen, A. K.....	Cheyenne, Wyoming
Jewett, L. B.....	Lodgepole, Nebraska
Jiskra, Wm.....	Tobias, Nebraska
Kafka, J. A.....	Atkinson, Nebraska
Kearney, J. T.....	Oakland, Nebraska
Lee, H. G.....	Spaulding, Nebraska
Lindahl, A. W.....	Oakland, Nebraska
McCabe, W. P.....	Ponca, Nebraska
McCunniff, F. A.....	La Java, Colorado
McElroy, R. J.....	Omaha, Nebraska
McGowan, H. F.....	Fonda, Iowa
McLeese, G. H.....	Davenport, Nebraska
Malm, E. C.....	Stromburg, Nebraska
Miller, M. R.....	Denver, Colorado
Miller, W. D.....	David City, Nebraska
Newcom, F. L.....	Arlington, Nebraska
Noll, H. J.....	Niobrara, Nebraska
Ohlson, F. W.....	Sextrop, Nebraska
Pexton, F. S.....	Harlan, Iowa
Pfisterer, R. M.....	Omaha, Nebraska
Porter, R. B.....	Alma, Nebraska
Putnam, A. J.....	Twin Falls, Idaho
Reams, A. T.....	Franklin, Nebraska
Rebal, R. J.....	Plattsmouth, Nebraska
Rolph, Mrs. E. L.....	South Omaha, Nebraska

Rush, H. J.	Ponca, Nebraska
Schroll, I. C.	Lodge Pole, Nebraska
Shyne, J. C.	Weston, South Dakota
Swanson, E. S.	Oxford, Nebraska
Taffe, G. F.	Litchfield, Nebraska
Thayer, J. E.	Davenport, Nebraska
Treinen, O. A.	Morris, Minnesota
Trythall, W. R.	Park City, Utah
Weber, L. C.	Arlington, Nebraska
Willard, A. C.	Pipestone, Minnesota
Woody, C. P.	St. Alhambria, Colorado
Eberhardt, Wm.	Denver, Colorado
English, J. W.	Omaha, Nebraska
Harrell, F. W.	Gibbons, Nebraska
Johnson, F. E.	Omaha, Nebraska
Leach, Stella	Creston, Nebraska
Lilliedoll, R. J.	Auburn, Nebraska
Milder, Wm.	Omaha, Nebraska
O'Brien, Leo	Omaha, Nebraska
O'Neill, J. L.	Hancock, Iowa
Peterson, C. E.	Sunderland, Nebraska
Schmidt, F. W.	Friend, Nebraska
Kennedy, Josephine	Charleston, South Carolina
Kehl, J. E.	Gilmore City, Iowa
Huston, B. B.	Neyland, Texas

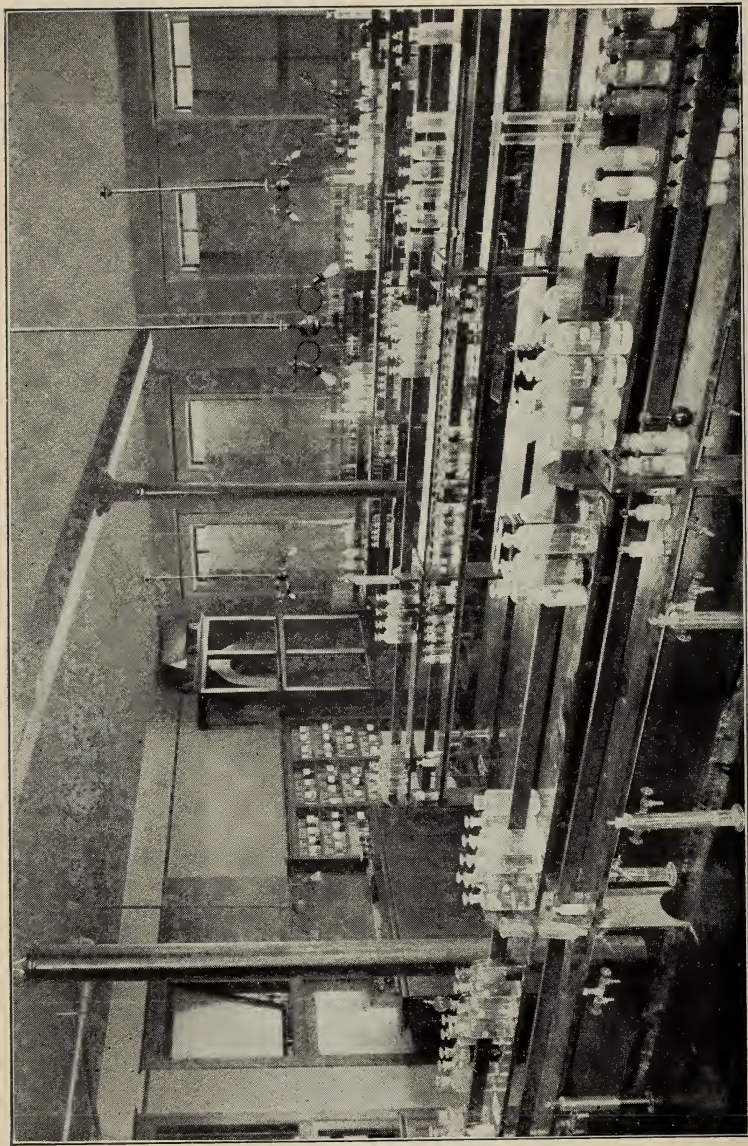
JUNIORS.

Altschuler, C. R.	Madison, Nebraska
Bauer, H. W.	Sutton, Nebraska
Baxter, J. J.	Wilsonville, Nebraska
Beniot, F.	Twin Falls, Idaho
Berkenkotter, G. F.	Petersburg, Nebraska
Bors, F.	Wilbur, Nebraska
Brook, D. A.	Hastings, Nebraska
Christensen, H.	Fremont, Nebraska
Dame, R. D.	Stratton, Nebraska
Dansky, Pauline	Omaha, Nebraska
Darledge, O. A.	Cambridge, Nebraska
DeFrance, Louise	Gilead, Nebraska
Drew, H. O.	Council Bluffs, Iowa
Englebart, W. E.	Fort Dodge, Iowa
Fredrickson, E. W.	Fremont, Nebraska
Friedrick, F. J.	Dubuque, Iowa
Firmage, A. A.	Salt Lake City, Utah
Gauvreau, A.	Omaha, Nebraska
Gee, Geo. W.	Palmer, Nebraska
Hanfelt, C. L.	Omaha, Nebraska
Bailey, T. M., Jr.	Rockport, Missouri
Breetzke, J.	Wisner, Nebraska
Greenberg, D.	Omaha, Nebraska
Gaeth, E. F.	Schuyler, Nebraska
Hasford, J.	Omaha, Nebraska
Johnson, L. A.	Omaha, Nebraska

Keleher, R. J.....	Norfolk, Nebraska
Nordby, Mat	Hartington, Nebraska
O'Rourke, S.	Condurango, Colorado
Quick, B. E.....	Rockport, Missouri
Schreiner, W. P.....	Exeter, Nebraska
Sheilds, F. A.....	Park City, Utah
Harrod, L. M.....	Columbus, Nebraska
Hecker, J.	Pierce, Nebraska
Hodsdon, H. E.....	Schuyler, Nebraska
Hodek, F. W.....	Prague, Nebraska
Hoyte, C. R.....	Yankton, South Dakota
Johnson, A. V.....	Muskegon, Michigan
Lincoln, R. E.....	Dunbar, Nebraska
Loomer, A.	Madison, Nebraska
Loopnow, R.	Lyons, Nebraska
Madden, W. E.....	Hornick, Iowa
Marsh, F.....	Council Bluffs, Iowa
Melcher, W. H.....	South Omaha, Nebraska
Metzer, L. H.....	Culberson, Nebraska
Miller, J.	Omaha, Nebraska
Mullen, Wm.....	Wood River, Nebraska
Murphy, H. F.....	Omaha, Nebraska
Murphy, J. B. H.....	Omaha, Nebraska
McLaughlan, J. P.....	Anaconda, Montana
McCombs, D. W.....	Genoa, Nebraska
McMahan, E. M.....	Emmetsburg, Iowa
O'Connell, Margaret.....	Grand Rapids, Minnesota
Sample, C. B.....	South Omaha, Nebraska
Seyfee, W. W.....	Le Java, Colorado
Schultheis, A. F.....	Wayne, Nebraska
Smith, H. R.....	Omaha, Nebraska
Stava, A. T.....	Bruno, Nebraska
Steinauer, Eulalia	Steinauer, Nebraska
Svoboda, F.	Omaha, Nebraska
Toepfer, F. F.....	Victoria, Kansas
Thompson, E. L.....	Chadron, Nebraska
Trepanier, C. P., Jr.....	Grand Forks, North Dakota
Trumble, H. W.....	Cambridge, Nebraska
Van Hecke, W.....	Sioux Falls, South Dakota
Wages, Harvey	Palmer, Nebraska
Wages, L. L.....	Palmer, Nebraska
Wagner, L. M.....	LeMars, Iowa
Walworth, J. M.....	Wisner, Nebraska
Williams, J. W.....	Pickrell, Nebraska
Winnieman, C. F.....	Hartington, Nebraska
Zastara, B. R.....	Howells, Nebraska



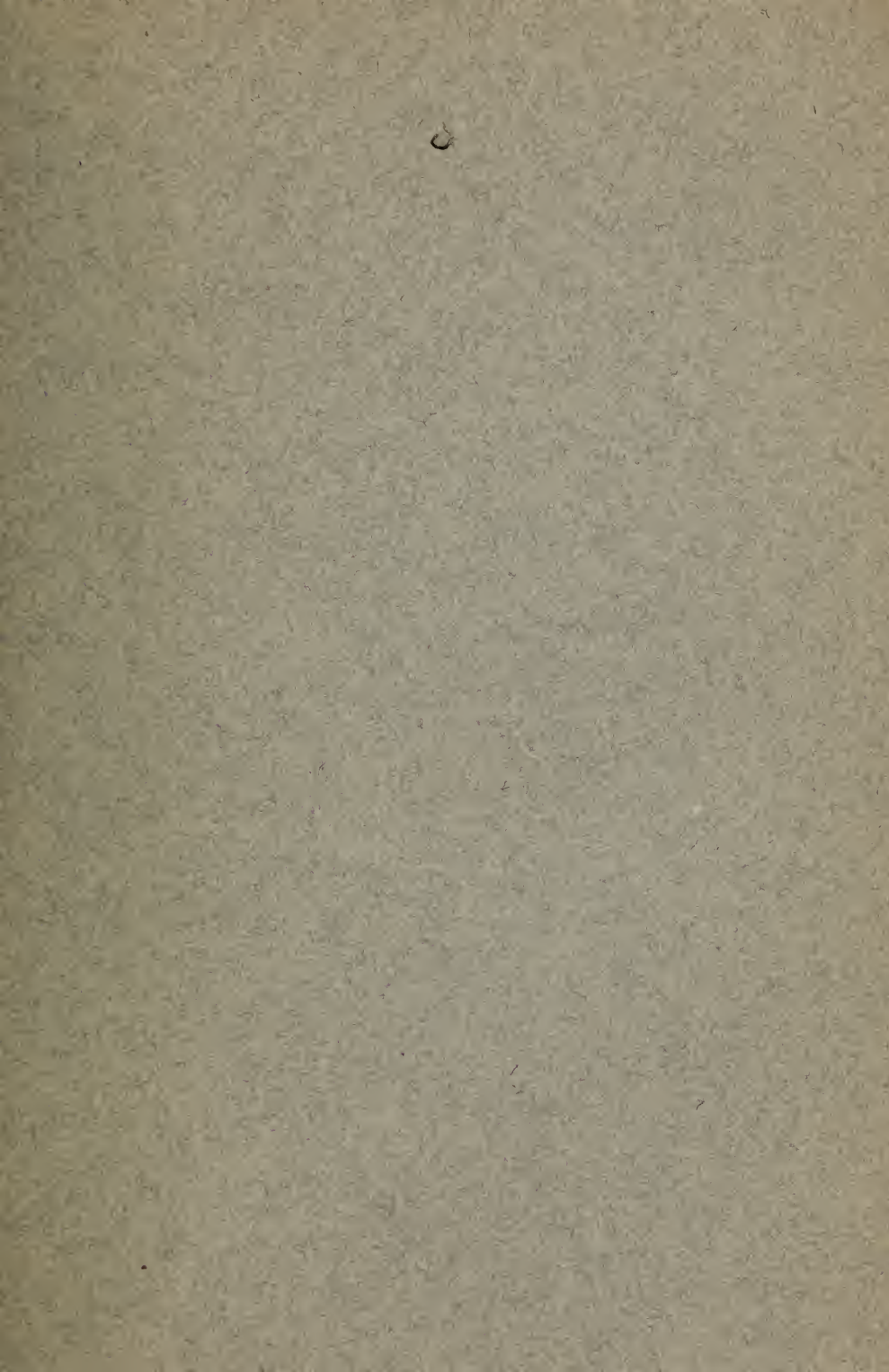
Creighton College of Pharmacy—Chemical Laboratory.



Creighton College of Pharmacy—Pharmaceutical Laboratory.

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...The...
Creighton University
Bulletin

VOL. 7

MARCH

No. 1

ANNOUNCEMENT
of the
COLLEGE OF PHARMACY
1915-1916



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Omaha, Nebraska. Entered as Second Class Matter, March 20, 1909,
at the Postoffice at Omaha, Nebraska, under the Act of July 16, 1894.

Calendar

1915

September 1—Wednesday, Classes begin.

November 25—Thursday, Thanksgiving Recess.

December 17—Friday, First Semester Examinations.

December 23—Thursday, Christmas Recess begins.

1916

January 3—Monday, Second Semester begins, 8 A. M.

February 7—Monday, Founders' Day. Holiday.

February 22—Tuesday, Washington's Birthday. Holiday.

April 21—Friday, Easter Recess begins, 8 A. M.

April 24—Monday, Easter Recess ends, 8 A. M.

April 20-29—Second Semester Examinations.

April 29—Saturday, Commencement.

Faculty

FRANCIS X. McMENAMY, S. J. The Creighton University
President of the University.

WILLIAM P. WHELAN, S. J. The Creighton University
Lecturer on Moral Principle in Pharmaceutical Practice,
and Supervisor.

I. CURTIS ARLEDGE, P. D. Creighton College of Pharmacy
Dean, Professor of Materia Medica and Botany.

JOHN E. O'BRIEN, Ph. C. Creighton College of Pharmacy
Professor of Chemistry.

H. C. NEWTON, Ph. C. Creighton College of Pharmacy
Professor of Theoretical and Practical Pharmacy.

PAUL L. MARTIN, A. M., LL. B. Creighton College of Law
Lecturer on Pharmaceutical Law.

T. BOLER, M. D. City National Bank Building
Lecturer on First Aids in Emergencies.

HERBERT GERALD, Ph. G., M. D.
. Creighton College of Pharmacy
Professor of Physiology.

J. W. FORBING, B. S., Ph. C. Creighton College of Pharmacy
Professor of Physics.

Creighton College of Pharmacy

The Creighton College of Pharmacy, formerly the Omaha College of Pharmacy, became a part of The Creighton University September 1, 1905. The school has enjoyed a rapid growth from the first and now ranks with the leading colleges of pharmacy in the country.

The building occupied by the College of Pharmacy adjoins the Creighton Medical College on the west, and is located at Fourteenth and Davenport streets. It is one of the finest and most completely equipped buildings of its kind. It will provide ample accommodations for the growing school for many years to come. On the first floor is a lobby which is equipped with steel lockers for the use of the gentlemen students. The ladies' rest room is also on this floor. It is furnished with every convenience for the comfort of the lady students. The museum and library occupies the large room at the back on the first floor. The library contains a choice selection of standard books upon pharmaceutical and chemical subjects. It also contains a complete set of the reports of the American Pharmaceutical Association from the time of its organization in 1852. This is a complete library of pharmaceutical literature in itself. All the leading pharmaceutical and chemical journals are kept on file.

The museum contains collections of all the materials used in pharmacy. One of the finest collections in this room is one of every drug, chemical, and pharmaceutical preparation contained in the United States Pharmacopoeia. It is literally the United States Pharmacopoeia illustrated. This collection is open to the use of the students for study and much valuable information is gained from it.

On the second floor is a faculty room, two large lecture rooms, and a private laboratory for the use of the faculty only.

The third floor contains the general stock room and the pharmaceutical and chemical laboratories. These laboratories are fitted with every convenience for practical work and provide space for one hundred and forty students to work at one time.

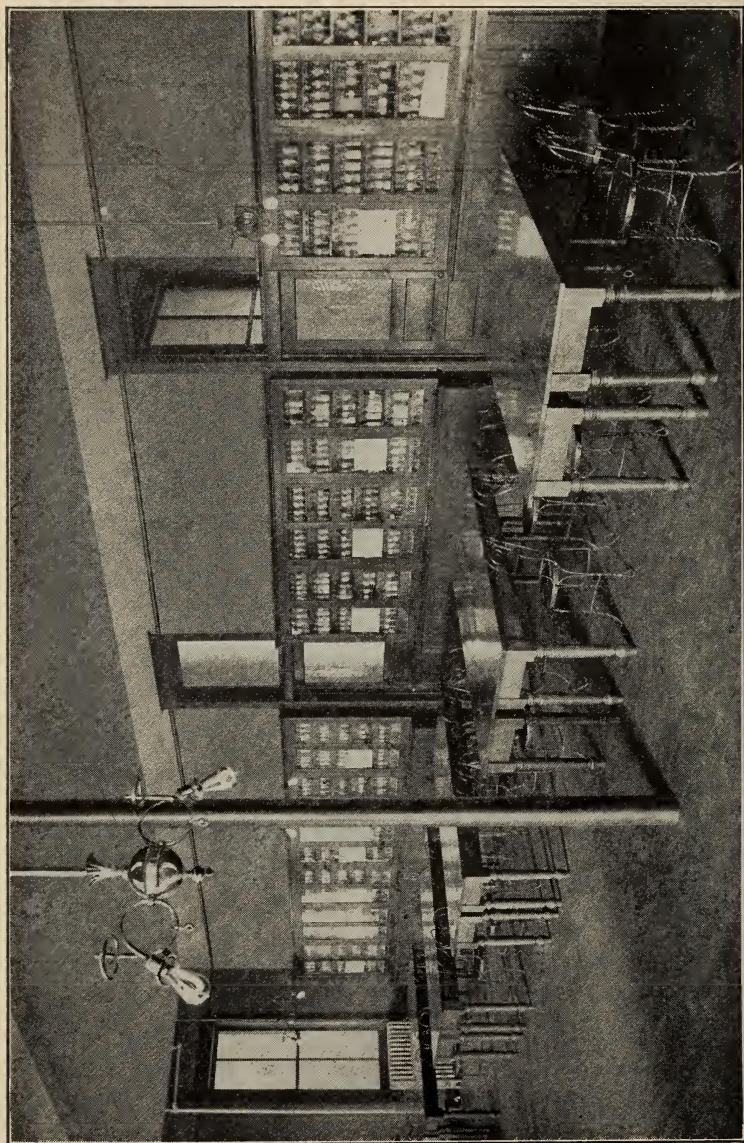
The Demand for Educated Pharmacists.

A Pharmacist is one who is skilled in the art of identifying, preparing, preserving, testing, and dispensing medicinal substances. A physician is one who is versed in the treatment of diseases by the use of medicine. The physician prescribes the remedy to be used, but the pharmacist prepares and dispenses the same. To properly prepare all medicinal substances in such a manner that their use as remedial agents shall produce the desired results requires a high degree of skill. Skill involves two things: First, knowledge, and, second, manual dexterity in execution. The most important factor in acquiring skill in the practice of pharmacy is the acquisition of technical knowledge. Knowledge comes by study and by observation, while ability to do comes through practice.

There are only two ways by which one can acquire the necessary amount of skill for the successful practice of pharmacy. One is by taking a systematic course in a college of pharmacy, and the other is by serving a long apprenticeship in a store and devoting much time to private study. The great majority of those who attempt to qualify themselves by the latter method find it a very discouraging process. A young man or woman upon beginning work in a drug store without any knowledge whatever of the materials with which he or she is expected to work, makes progress very slowly indeed. They must necessarily be assigned to a kind of work that any ordinary clerk in a general merchandise store can do, while they are forced to acquire a knowledge in a very discouraging way. They spend a number of years before they are able to acquire the knowledge necessary to enable them to become registered pharmacists. On the other hand, those who take a course in a good college of pharmacy before taking up the work in a store, are in possession of such professional or technical knowledge as will enable them to do anything required to be done in first-class pharmacy. They know the names and are familiar with the drugs and chemicals, their properties



Creighton College of Pharmacy.



Creighton College of Pharmacy—Library and Museum.

and their method of preparation, uses, and tests. They soon become as proficient in their work as those who have devoted years to the profession.

The pharmacist occupies so important a position between the physician and the patient that the public has a right to demand that he shall be skilled in his art. His services are of as great importance as are the services of a physician, and the responsibility resting upon him is as great as the responsibility resting upon the physician. The physician must show evidence of special training for the practice of medicine before the State will permit him to engage in such practice. Likewise the State requires every one who desires to practice pharmacy to show special fitness for such work by passing a more or less rigid examination, or by giving evidence of having completed a course of training in some good college of pharmacy. Some States require the candidate for examination to be a graduate of some recognized college of pharmacy. In due course of time the requirements of those who desire to practice pharmacy will be as exacting as they are for those who desire to practice medicine. Rapid strides are being made in respect to elevating the practice of pharmacy to the rank of a profession and in removing it from the position of pure commercialism. Important legislation has recently been enacted by the general government, and by many State governments fixing the standard of purity of drugs and of foods. This legislation has created a large demand for those specially qualified as inspectors. Such legislation is certain to be followed by that requiring a much more thorough preparation for those who desire to engage in this line of public service, as well as for those desiring to engage in the business of a retail pharmacist.

Pharmaceutical Chemistry Course.

This course has been introduced to meet the demands of many who wish to qualify as Commercial Chemists or Food and Drug Analysts. All who enroll in this special course take the regular work for the first sixteen months, and after the successful completion of it, they are given special instruction for eight months in Bacteriology, Manufacturing Chemistry and Analytical Chemistry. Special attention is given to the annalysis of foods and drugs, so that the student may be prepared to qualify for a position as government chemist. To all who

successfully complete this course the degree of Pharmaceutical Chemist is given.

Course of Study.

The course of study requires two terms for completion and leads to the degree of Graduate in Pharmacy. The first or Junior Course is eight months. The Senior Course is eight months. About seventeen hundred hours of actual classroom and laboratory work are required in the course. The training acquired qualifies the graduate to pursue successfully any branch of pharmaceutical work or ordinary chemical analysis. The course embraces practically all the work that is ordinarily given for the degree of "Pharmaceutical Chemist." See the detailed description for summary of work covered in each subject.

The course is arranged in a progressive manner. The subjects taken up at the beginning of the term lay the foundation for the subjects that follow. Although lectures are given daily, the students are required to study the lessons before they are taken up in class. Then by question and explanation the instructor fixes the principles upon the student's mind in such a way that the knowledge he obtains is of practical benefit to him. All laboratory work is done under the immediate supervision of the instructor.

The course begins about September the first and closes about the beginning of May. By this arrangement there are four months vacation between the Senior and Junior courses.

Subjects Taught in the Course.

JUNIOR YEAR—Eight Months

Inorganic Chemistry, five hours per week for thirty-two weeks.

Experimental Chemistry, ten hours per week for sixteen weeks.

Qualitative Analysis, ten hours per week for sixteen weeks.

Physics, five hours per week for eight weeks.

Pharmaceutical Latin, five hours per week for eight weeks.

General Pharmacy, five hours per week for sixteen weeks.

Botany, five hours per week for eight weeks.

Microscopy, four hours per week for twelve weeks.

Materia Medica, five hours per week for sixteen weeks.

Pharmaceutical Arithmetic, five hours per week for sixteen weeks.

Physiology, five hours per week for sixteen weeks.

Total, 952 hours in class room and laboratory.

SENIOR YEAR—Eight Months,

Manufacturing Pharmaceutical Chemistry, ten hours per week for sixteen weeks.

Dispensing, ten hours per week for twelve weeks.

Pharmacy, five hours per week for twenty weeks.

Materia Medica and Therapeutics, five hours per week for twenty-four weeks.

Toxicology and Posology, two hours per week for twenty-four weeks.

Organic Chemistry, three hours per week for twenty-four weeks.

Quantitative Analysis and Drug Assaying, six hours per week for thirty-two weeks.

Commercial Training, two hours per week for twenty-four weeks.

Special Dispensing in the Free Dispensary of the College of Medicine, twelve hours per week from six to eight weeks for each student.

Total, 784 hours in class room and laboratory.

Inorganic Chemistry.

The science of chemistry lies at the foundation of a course in Pharmacy. Without a scientific knowledge of chemistry one cannot intelligently overcome the numerous difficulties that arise in compounding and dispensing. The subject is taken up in the most elementary manner. Consideration is first given to the general properties of matter and the laws governing the form and state of existence of the same. The relationship of atoms and molecules, atomic and molecular forces, physical and chemical changes, elementary and compound substances, are carefully studied. The subject is taught by lecture, recitation and by experimentation. Numerous experiments are performed by the instructor illustrating the principles studied in the classroom. Each student performs a great variety of experiments in order to become thoroughly familiar with the characteristic properties of the substances studied. The non-metals and their characteristic compounds are studied first. Due attention is given to the nomenclature of acids and the salts derived from them. The metallic elements are studied in the order of their arrangement in the Periodic System. Numerous examples illustrating every kind of chemical problem are given. Much practice is given in writing chemical equations. The course continues thirty-two weeks, five hours per week.

Organic Chemistry.

The course in Organic Chemistry continues through the entire Senior year. It includes a study of the source of organic compounds, their properties, purification, proximate and ultimate analysis, determination of melting and boiling point, homology, isomerism, destructive distillation, combustion, decay, fermentation, determination of formula from result of analysis; structural, graphic and molecular formula, etc.

The organic substances are classified and studied under the following heads: Hydrocarbons, halogen derivatives of hydrocarbons, alcohols, aldehydes, acids, ether,—simple and compound,—Ketones, fats, soaps, carbohydrates, glucosides, cyanogen compounds, mercaptans, benzene and benzene derivatives as mono, di, and trihydroxy compounds, the aldehydes, acids, terpenes and their derivatives, diazo compounds, pyridin bases, animal and vegetable alkaloids, complex synthetic com-

pounds as phenacentin, antipyrine and acetanellid, amines, amides and all other organic substances of pharmaceutical interest. Lectures on the commercial industries of sugar-making, brewing, soap-making, gas-making and fermentation industries are given at appropriate times during the course.

Experimental Chemistry.

This course gives the proper use of apparatus, methods of manipulations, and prepares the way for Analytical Chemistry.

The work in Inorganic Chemistry in the classroom is supplemented by practical work in the laboratory. Each student is supplied with a full set of apparatus and all chemicals necessary for performing all experiments which will aid him in understanding the principles taught. Sufficient direction is given the student to enable him to successfully perform any experiment. He is then required to perform the experiment, make his observations and draw his conclusions. It is in this work that independence of thought is developed. Full notes are made upon all experiments performed and the same are carefully inspected.

Qualitative Analytical Chemistry.

The course teaches the proper use of apparatus, methods of manipulation, and prepares the way for the more important work of Analytical Chemistry and Pharmaceutical Manufacturing.

The course follows the course in Experimental Chemistry. It is begun with a general description of the operations, apparatus used and with the proper classification of the elements and compounds for the purpose of qualitative analysis. The action of the group reagents upon solutions of all the common base-forming elements is determined by experiment. The bases are then classified into groups. The methods of separation of the bases of each group is studied in connection with solutions of known composition. Full record is required to be made of each step as to the substance used, the reagent, the result, the inference and the compounds formed. All reactions are required to be represented by equations. Work with solid and liquid substances of known composition is continued until such time as the student becomes thoroughly familiar with the principles involved. Acid radicals are studied in the

same systematic manner as are the bases. Substances of unknown composition are then analyzed and their composition determined. The student is required to make a stated number of correct analyses before he is given credit for the course.

The course in Inorganic Qualitative Analysis is followed by a course in Organic Qualitative Analysis. The course not only fits the student for practical analytical work, but rules and principles are developed which greatly aid in Manufacturing Chemistry and in Dispensing. It also prepares for the systematic testing of the purity of commercial chemicals and pharmaceutical products.

Quantitative Chemical Analysis.

This course extends through sixteen weeks, six hour per week. It includes work in gravimetric analysis, illustrating all principles of that branch of quantitative analysis; and in volumetric analysis, illustrating the care, use, and calibration of apparatus, principles of standard solutions, and in making and standardizing volumetric solutions of all kinds. Much practice is given in acidimetry, alkalimetry, oxidation and reduction, analysis by precipitation, and in gasometric analysis. The course is followed by a course in Drug Assaying extending through sixteen weeks, six hours per week.

Physics.

This subject is taken up at the beginning of the Junior Year because of the important relation it bears to Chemistry and to Pharmacy. A knowledge of the elementary principles of Physics is essential to a clear understanding of these subjects. The principal topics treated are matter, force, molecular theory of structure, states of matter, properties, weight, cohesion, adhesion, capillarity, diffusion, osmosis, dialysis. Mechanics of pressure, conditions of equilibrium, the barometer, pumps and condensers, Boyles Law, the syphon, buoyancy, density and specific gravity. Under heat we study source, temperature, the thermometer and relationship of various thermometers, conduction, convection and radiation, changes in state as produced by heat as liquefaction, vaporization, distillation, sublimation, specific heat, etc. The important principles of light and electricity are also considered.

Latin.

No one can thoroughly understand the official nomenclature of the materials of medicine and pharmacy without some knowledge of Latin. It is also essential in correct prescription writing. No attempt is made to give a complete course in Latin, but the aim is to present the elements of the language in such a way as to enable the student to understand the structure of the Latin words, phrases, and abbreviations that are used in medicine and pharmacy.

The course is given immediately following the course in Physics and gives the proper foundation for the use of the language in the study of *Materia Medica* and Pharmacy. The course continues eight weeks. The text used is prepared especially for pharmacy and medical students, and contains no subject matter that is unprofitable for students of these subjects.

Pharmacy, Junior Course.

Pharmacy is taken up at the beginning of the Junior Course. The course is begun with a description of Pharmacopoeias, their origin, development, methods of revision, methods of arrangement, and with a history of the United States Pharmacopoeia. The National Formulary, Dispensatories, and other literature of Pharmacy are discussed. The sixteen weeks of their Junior Course, which is devoted to the study of pharmacy, is spent entirely upon General Pharmacy. The principles and construction of balances, their use, care, and methods of testing; heat and its source, methods of generation, regulation, measuring and its use in fusion, sublimation, calcination, distillation, evaporation, incineration, and torrefaction; mechanical division of drugs as under grinding, trituration, levigation, elutriation, precipitation, use of mortars, etc.; principles of the separation of volatile and nonvolatile substances, glycerites, etc., are carefully studied. The definitions of the National Syllabus Committee are given the students and they are required to use them in their recitations. The balance of the Junior term is given to the study of the official salts.

Pharmacy, Senior Course.

The Senior Course in Pharmacy is a continuation of the work of the Junior Course and continues through twenty weeks, five hours

per week in the classroom, supplemented by the work in the pharmaceutical laboratory, ten hours per week for twenty-four weeks. The course is comprehensive and thorough, as every class of official preparation is carefully studied, both in the classroom and in the laboratories. It includes a study of waters, liquors, decorations, infusions, syrups, mucilages, honeys, glycerites, elivirs, spirits, tinctures, wines, vinegars, fluid extracts, resins, oleoresins, collodions, emulsions, mixtures, pills, lozenges, confection, effervescent salts, cereates, ointments, powders, triturates, liniments, oleates, plasters and suppositories.

The course also includes a careful study of the elements, hydrogen, oxygen, chloride, bromide, iodine, sulphur, phosphorus, carbon, boron and their compounds; also the compounds of sodium, potassium, lithium, ammonium, calcium, strontium, magnesium, aluminum, cerium, iron, manganese, chromium, mercury, antimony, arsenic, bismuth, copper, lead, zinc, gold, silver, and also the organic substances; cellulose, starches, gums, sugar, the coal tar products and derivatives of the same, alcohols, fats, fixed oils, essential oils, organic acids, glucoses, alkaloids, neutral principles and the animal products. A few weeks are devoted to the study of the National Formulary and non-official preparations. The course closes with a thorough study of the prescription, the various kinds of incompatibility, solubility of ingredients, pricing, and abundant practice in the reading of difficult prescriptions taken from the actual prescription files of the city stores.

Manufacturing Pharmaceutical Chemistry.

This course is supplementary to the class work in pharmacy and embraces about three hundred and twenty hours of laboratory work. It follows closely the order of instruction in pharmacy. Each student is supplied with a full set of apparatus for carrying out all the important processes in pharmacy. The college furnishes all chemicals free of cost to the student. The work is carefully supervised by the instructor who spends the whole period of laboratory work with the class, giving all necessary directions as to the best methods of manipulations, etc. It includes practice in the use of every form of pharmaceutical apparatus, such as thermometers, hydrometers, pycnometers, balances, burners, drying ovens, steam baths, water baths, distilling apparatus, etc., etc. The

students are required to save a sample of each preparation, which becomes his property upon the completion of the course. Each sample is carefully inspected by the instructor, and if found to be unsatisfactory the student is required to repeat the process until a product is obtained which will meet every requirement. Every important pharmaceutical product as enumerated in the remarks upon the Course in Pharmacy is prepared in the laboratory. The most difficult ones of each class are chosen for preparation. The preparations which come more particularly under the head of extemporaneous pharmacy are studied in the course of Dispensing, which is a continuation of the laboratory course in Manufacturing Pharmaceutical Chemistry.

Dispensing.

This course follows the course in Manufacturing Pharmaceutical Chemistry and continues twelve weeks, ten hours per week. It is placed last in the course in order to give the student the benefit of all the knowledge acquired in the previous course, in developing the most important and practical part of the pharmacist's art, the art of dispensing.

A careful study is made of the prescription as to its purpose, its parts, and the proper course of procedure upon receiving a prescription. Extensive practice is given in reading and criticising prescriptions of every character. The student is also required to write a number of typical prescriptions. A great amount of practice is given in filling prescriptions involving difficulties of every kind. The order of receiving, filing, checking, pricing and recording prescriptions in the Dispensing Laboratory is the same as is in use in the best prescription pharmacies. Full instruction is given as to the proper selection, care, and use of all materials used in dispensing. Methods of weighing, measuring, pasting and labeling, wrapping, cleaning of utensils, arrangements of prescription case, etc., are all thoroughly taught by theory and by an abundance of practice.

Systematic instruction and an abundance of practice is given in making and dispensing the various kinds of mixtures, pills, emulsions, powders, suppositories, ointments, cereates, plasters, confections, lozenges, troches, cachets, konseals, hard and soft capsules, bougies, etc.

Most careful attention is given to incompatibility of every kind—therapeutical, pharmaceutical, and chemical—and the methods of overcoming the same. This course of instruction is supplemented by practice in our model prescription department, in which bona fide prescriptions for the patients of the free dispensary of the Medical College are filled

Practical Prescription Work.

All the prescriptions written for patients at the free dispensary of Creighton Medical College are filled by students of the College of Pharmacy under the supervision of one of the instructors. A model prescription department is fitted up especially for this work. The Senior Class is divided into small sections and each section does this practical work for a given period. Perhaps as great a variety of prescriptions is filled in this department each day as is filled in any one of the city stores, since a large number of the leading physicians of the city do work in the free dispensary. Students are required to make nearly all materials used in this department. It affords a large amount of practical experience which is of great value in business.

Pharmaceutical Arithmetic.

The course in Pharmaceutical Arithmetic extends through sixteen weeks, five hours per week, and is given in the Junior Course. The course is arranged to meet the needs of those whose mathematical training has been somewhat limited, and to give to all the necessary practice in solving problems which come up in the practice of pharmacy and in chemical analysis. The work is arranged in logical order and includes problems of weights and measures, specific gravity, specific volume, conversion and reduction of formulas, percentage problems of every kind, dilution and fortification, alligation, problems involving chemical formulate and reaction, and numerous misiellaneous problems. On the whole it is one of the most helpful courses given.

Botany.

A knowledge of this branch is indispensable to a pharmacy student. The student develops the language needed in studying Pharmacognosy, Materia Medica, and Powdered Drugs. Instruction in this subject is given largely by recitations. A good textbook is used as an outline. The

student is required to use plant specimens in preparing his lessons, and when convenient make botanical excursions into the country. Most time and attention are given to those parts that concern Pharmacognosy and Materia Medica. The morphology, ecology, histology, and plant physiology; the classification of roots, and leaves; and the general classification of plants are all thoroughly canvassed.

Microscopy.

Each student is supplied with a compound microscope and other needed accessories. The student is taught how to manipulate the instrument; and also how to kill, harden, soften, section, clear, stain, dehydrate and mount specimens. As many as possible of the crude drugs are used in illustrating microscopic structure of plant tissue. The cells, tissues, systems, and organs of the higher plants; some lower plants; many plant products such as starch, chlorophyll bodies, crystals, resins, gums, and gumresins are mounted, studied and drawn. The aim of the course is to teach the student how to detect adulterations in powdered drugs. It follows the courses in Pharmacognosy and Materia Medica. The microscopic structure of many pure samples of starches, powdered spices, leaves, stems, roots, barks, roots and rhizomes, resins, etc., are studied as standards. Other physical properties, such as color, taste, odor, etc., are associated with the microscopic appearance. This qualifies the student to pursue the study of adulterated drugs.

Pharmacognosy.

This branch embraces the study of crude drugs and is taken up subsequent to Microscopy. Each student is equipped with a set of crude drugs that he takes to his room. Important drugs get most consideration. The school possesses several complete sets of drug samples. One set contains every specimen in the United States Pharmacopoeia. The students have access to this set at all times. Several wholesale drug houses have donated to the school samples of crude drugs. The drugs are studied in botanical order one hour a day for two months.

Materia Medica and Therapeutics.

Instruction in these branches is given by lecture and recitation. The United States Pharmacopoeia vegetable drugs are first taught, then the

animal, the inorganic, and finally some important unofficial drugs. The vegetable and animal drugs are studied in botanical and zoological order. As the student's knowledge of *Materia Medica* becomes more comprehensive, attention is given to the arrangement of drugs according to their therapeutic effect. The official definition, natural order, botanic source, synonyms, habitat, part used, active principles, action and uses, official preparations and dose of each vegetable drug are learned. Similar outlines for the animal and inorganic drugs are followed. The United States Pharmacopoeial dose is taught for important and potent drugs.

Toxicology.

This is a subject of great importance to the physician, the pharmacist, and the public. The public has a right to demand of the pharmacist such a knowledge of poisons as to enable him to guard against any possible errors in prescriptions. All candidates for license to practice are required to pass an examination in toxicology. The pharmacist is expected to be competent to afford prompt and intelligent treatment in cases of accidental poisoning. The poisons are classified into true, corrosive, and cumulative. The symptoms, antidote, and treatment are carefully studied. The methods of detection and test are given in connection with the course in Physiological Chemistry and Drug Analysis.

Drug Assaying.

This course is a continuation of the course in Quantitative Analysis. The work includes analysis of the following drugs by the methods of the United States Pharmacopoeia and modification of these methods; belladonna, leaves of root, and some preparations of belladonna; cinchona for anhydrous and other soluble alkaloids, and fluid extract of cinchona; cocoa; colchisum corm and seed; conium, hydrastis, ipecac, nux vomica and some preparations, opium and some of its preparations. The course is thoroughly practical and teaches the student to be able to confirm the strength of all potent drugs.

Pharmaceutical Testing.

Qualitative and quantitative tests are made for purity and identity of inorganic acids and compounds, the organic acids and salts of organic

acids, alcohol, ether, chloroform, phenol, the estimation of the iodine value and saponification value of fixed oils, assay of essential oils, pepsin and pancreatin, scale salts, tests for purity and identity of alkaloids, acetanilid, prenacetin, sulfornal, antipyrin, and many other organic compounds.

This course fits the student for the analysis of any pharmaceutical product and lays the foundation for the practical commercial chemical analysis.

Physiology.

Every intelligent pharmacist should be acquainted with the structure and functions of the organs of the body. He may then better understand the action of drugs on the system. The relation between the action of drugs and Physiology is made clear to the beginner by teaching in connection with the Physiology the action of such drugs as emetics, astringents, cathartics, carminatives, etc., as illustrations. Instruction is given by recitation and lecture. Only those parts of the subject considered of practical importance to the student are extensively taught. The subject is illustrated by specimens, manikins, and skeletons. Special lectures are given on hygiene by eminent doctors of the medical faculty. Instruction is given five hours per week for sixteen weeks.

Physiological Chemistry and Urinalysis.

This course continues six weeks, ten hours per week, in the laboratory. It is supplementary to the course in Physiology in the classroom. In it is taken up in the chemistry of the carbohydrates, such as dextrose, inositol, cane sugar, milk sugar, maltose, starch, glycogen, and cellulose; of fats as to composition, decomposition, saponification, and emulsification; of proteids as to classification, and the physical and chemical properties. Attention is given to the chemistry of foods, as milk, meat, eggs, flour, and the changes they undergo when cooked, and of the action of the saliva, the gastric, pancreatic and intestinal juices and their respective ferments; and of the bile and the blood.

In Urinalysis attention is given to the normal constituents, their tests and variation in disease, and to the abnormal constituents, their signification and tests. The microscope is also used in the detection of

the abnormal constituents. Both qualitative and quantitative tests are given whenever both would be of value in a diagnosis of the condition. This course fits the student for practical uranalysis.

First Aid in Emergencies.

In connection with the course in Physiology is given a course in "First Aid to the Injured." It is a natural thing for all to rush to the nearby drug store for assistance in case of an accident of any kind. Pharmacists should be familiar with the most simple and effectual means of handling all kinds of accidents until the physician can be procured. A course in "First Aid" is given in order to make the students familiar with the best methods of procedure. This course is given in the form of lectures and by practical illustration both in the college and in the hospital. What to do in case of "Bleeding," "Fractures," "Fainting," "Drowning," "Bites of Animals," "Poisoning," etc., receive careful study. This course is not intended to fit the pharmacist to take the place of the physician, but simply to teach him what should be done until the physician or surgeon can be obtained. The life of the injured very frequently depends upon what is done upon the immediate occurrence of the accident. This course meets a pressing demand and is pursued with the greatest interest and profit.

Commerical Training.

A short course is given in which the students are taught the proper form and use of all kinds of commercial paper; as notes, drafts,—foreign and domestic,—Checks, bills, statments, invoices, inventories, etc. They are taught the most improved and labor-saving methods of keeping the necessary records of their business. This is as important an element of the pharmacist's training as is the instruction in pharmacy proper.

Special Work.

Students who are able to give only a portion of their time to their studies may take such branches as they desire and devote the remainder of their time to other work. Those who adopt this method will require a longer time to complete the course, but many will be thus enable to

take the work who otherwise would not be able to do so. No special course preparatory to State Board Examinations is given. Students will not be enrolled for less than full term; neither will they be permitted to take a State examination before the term for which they have enrolled has been finished.

Examinations.

Regular monthly examinations are held in each branch in addition to the drills and class tests that are given from time to time in the regular course of the work. Record is kept of these monthly examinations and these records form a part of the final standing of the student. These regular examinations are a great help to the student in giving him opportunity to use the knowledge acquired and in teaching clearness of expression. A final examination must be taken in every branch before credit will be given for the completion of that particular study.

Entrance Requirements.

No one should undertake the study of pharmacy who has not, at least, one year of high school. A complete high school course is a great advantage, but one year high school is all that is required for entrance. For the degree of Pharmaceutical Chemist four years high school are required.

Time to Enter.

All students should be present at the beginning of the session in September. Students who enter in September will finish the Junior Course the following May. They will have a vacation during the Summer months and take up the Senior Course in September, the second year. The Senior Course is completed in eight months, or about the first of May. Those who enter after the session has begun must take up all back work in order to receive full credit for the work of the course, otherwise they will receive credit for the actual time in attendance.

Requirements for Graduation.

Every person upon whom this college confers the degree of Graduate of Pharmacy must be of good moral character and have reached

the age of eighteen, and have all previous conditions removed. Evidence must be furnished that the candidate has attended a full course in some reputable College of Pharmacy, the last school year of which must have been in this college, and they must satisfactorily pass all final examinations. An attendance of ninety per cent is required.

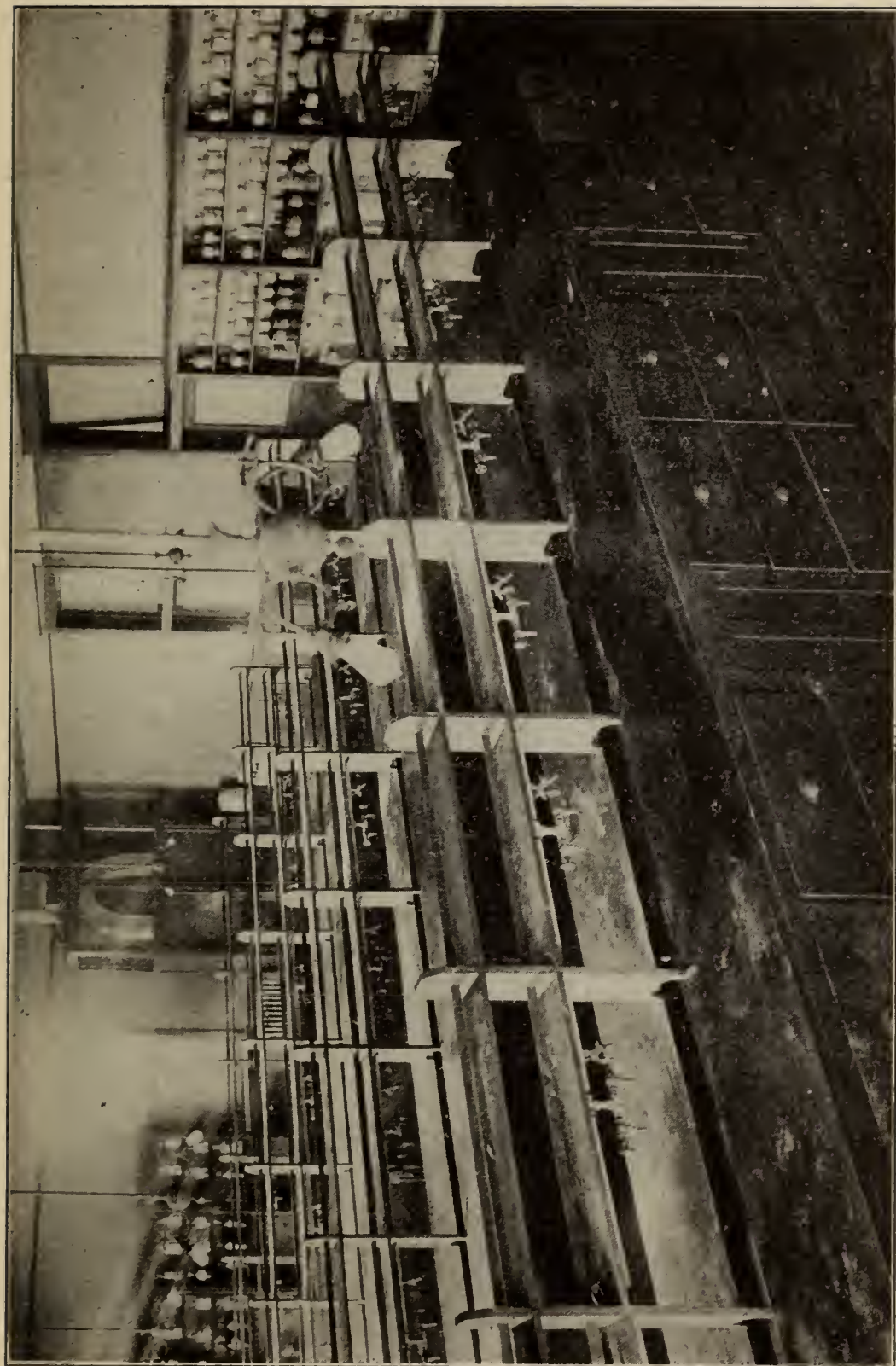
Text Books.

The text books in regular use are as follows: Remington's Pharmacy, Burgen & Davis' Botany, Simon's Chemistry, Leffman and La Wall's Organic Chemistry, Wilcox's Materia Medica, Sturmer's Pharmaceutical Arithmetic, Sturmer's Pharmaceutical Latin, Brundgage's Toxicology, Hough and Sedgwick's Physiology, United States Pharmacopoeia, and the National Formulary.

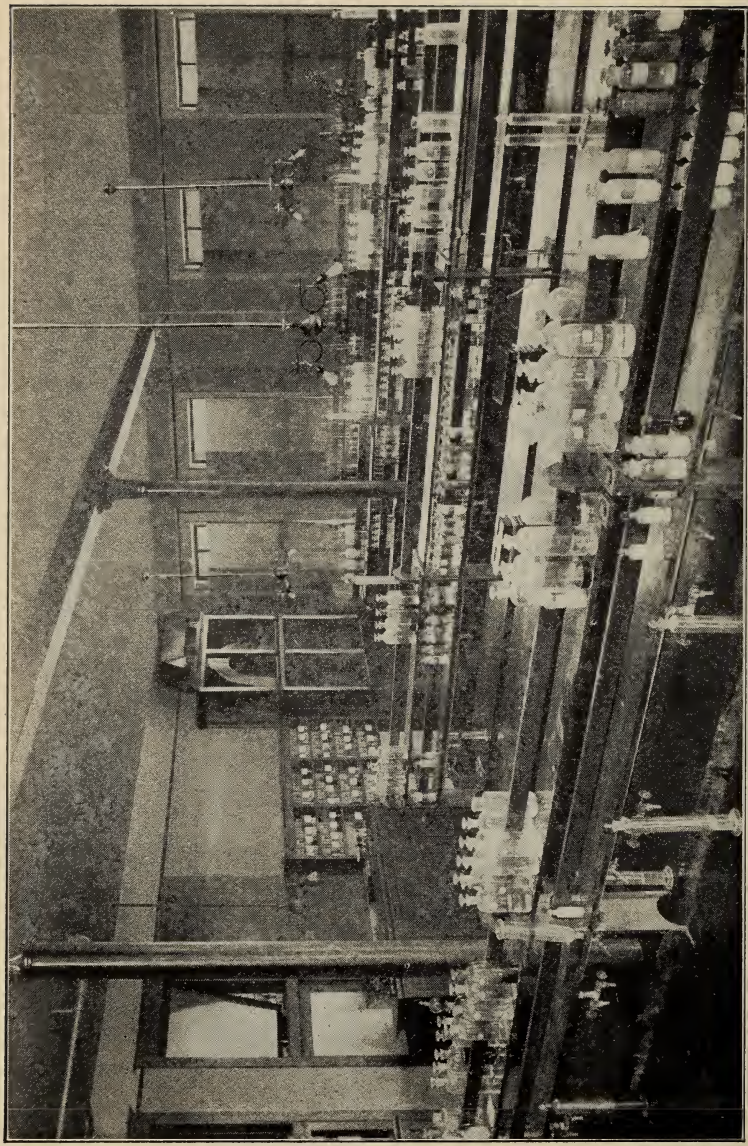
Following are the most important reference books used in the work: The National Standard Dispensatory, The United States Dispensatory, Remington's Practice of Pharmacy, Colblentz's Pharmacy, and many other standard works on Pharmacy, Materia Medica, and Chemistry. All textbooks may be obtained at the college.

Expenses and Deposits.

A Matriculation fee of \$5.00 is charged. This is payable but once and is never refunded. There is also a fee of \$5.00 per year covering general admission to the University Athletic Events, Glee Club Concert, Debate, College Play and subscription to the Chronicle, the University's official monthly publication. The tuition for the Junior Course is \$100.00, payable \$50.00 at the time of entrance and \$50.00 at the beginning of the second half of the Junior Course. The tuition for the Senior Course is \$60.00, payable at the beginning of the course. Students who have taken their Junior Course at other colleges are required to pay \$80.00 tuition for the Senior Course. Special arrangements may be made when it is not convenient to pay the tuition as indicated above. No laboratory fees are charged aside from a deposit of \$5.00 to cover breakage. Any unused portion of this deposit is refunded at the time the student leaves the school. The graduation fee is \$10.00, payable at least three weeks before Commencement.



Creighton College of Pharmacy—Chemical Laboratory.



Creighton College of Pharmacy—Pharmaceutical Laboratory.

No tuition is refunded, but in case a student is compelled to leave school before completing the term for which he has enrolled, credit will be given for the unused portion.

Employment.

The college will do all it can to secure employment for students who desire assistance. It will assist all who desire to defray a portion of their expenses while attending college in securing places to do relief work in stores, to act as waiters in restaurants, hotels, etc. All who desire such positions will be accommodated.

Valuable assistance will be given the graduates in securing permanent positions for them. We have many more calls for competent help than we can supply.

Board and Room.

Good rooms and board may be had, together or otherwise, near the college at reasonable rates. A list of reliable places is kept at the college office, and students are assisted in finding satisfactory places. Those who come from a distance should not engage room or board before they come to the college office unless they are acquainted in the city and understand fully the conditions.

Good rooms, including heat, light etc., may be had for from \$1.00 per week to \$1.50 per week. Table board with private family will cost from \$3.00 to \$4.50 per week. Many students get board and room for \$17.00 per month.

Special University Privileges.

Students of pharmacy may take advantage of several Literary, Debating and Oratorical Societies, conducted under the supervision of members of the University Faculty, and they may receive individual help, just as students of the Classical Department do.

General Information.

To reach the college from the Union or Burlington Stations, take a Dodge street car and get off at Fourteenth street. Walk two blocks north to the college at the corner of Fourteenth and Davenport streets.

The college is situated three blocks south and one block east of the Webster Street Station. Bring baggage checks to the college office and you can secure your room before having your baggage removed from the depot.

Students arriving in the city at night should go to some good hotel and report to the college next day. School is in session five full days in the week. The time required at school is from six to seven hours per day, in recitation and laboratory work. Lessons must be prepared outside of these hours.

The State Board of Examiners usually holds its February examination at the college. This gives all the graduates who have had the necessary experience an opportunity of taking this examination without any inconvenience.

Students of the College of Pharmacy are welcome to take part in all athletic privileges offered by the University. They also have the privilege of using the large library of Creighton University and of joining the Orchestra, Band, Glee Club, and Choir.

Frequent visits are made during the year to many large manufacturing plants in the city. A great amount of practical information is gained by these visits.

For further information concerning the College of Pharmacy, address, The Dean, 14th and Davenport Streets, Omaha, Nebraska.

For information concerning the other colleges of the University, address—

The Dean, Creighton College of Law, 210 South 18th Street.

The Dean, Creighton College of Medicine, 14th and Davenport Streets.

The Dean, Creighton College of Dentistry, 210 South 18th Street.

The Dean, Creighton College of Arts, 25th and California Streets.

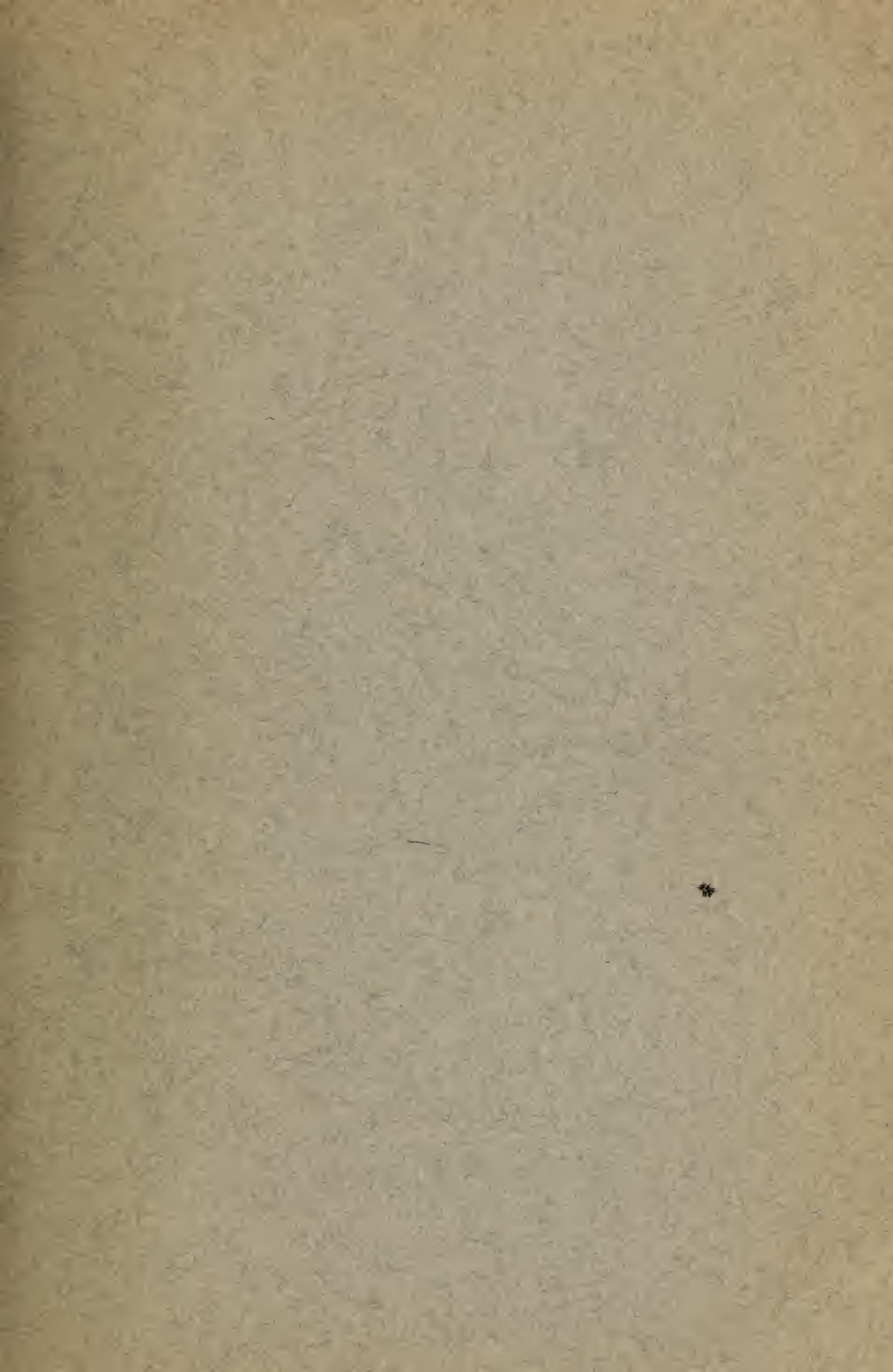
Following is a list of students for the year 1914-1915:

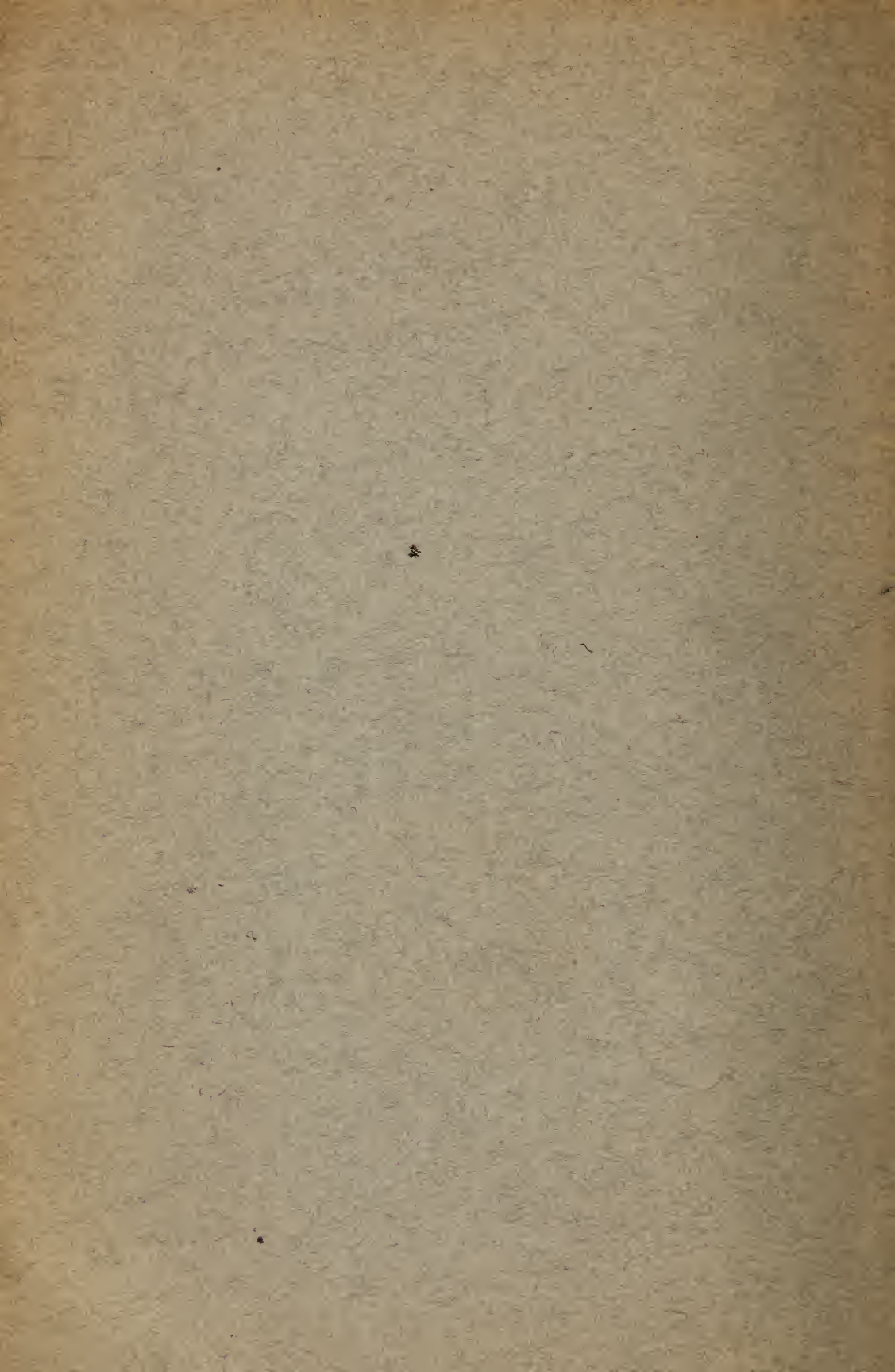
SENIORS.

Archer, E	Omaha, Nebraska
Bauer, H. W.	Sutton, Nebraska
Baxter, J. J.	Wilsonville Nebraska
Benoit, F	Twin Falls, Idaho
Berkenkotter, G. F.	Petersberg, Nebraska
Brooke, D. A.	Hastings, Nebraska
Christensen, H. N.	Fremont, Nebraska
Dame, R. D.	Stratton, Nebraska
Dansky, Pauline	Omaha, Nebraska
Darlage, O. A.	Cambridge, Nebraska
Defrance, Louise	Gilead, Nebraska
Drew, H. O.	Council Bluffs, Iowa
Englebart, W. E.	Fort Dodge, Iowa
Fredrickson, E. W.	Fremont, Nebraska
Fredrich, A. G.	Dubuque, Iowa
Gauvreau, A.	Omaha, Nebraska
Hanfelt, C. T.	Omaha, Nebraska
Herrod, L. M.	Columbus, Nebraska
Harrel F. W.	Gibbon, Nebraska
Hecker, J.	Pierce, Nebraska
Hodsdon, H. E.	Schuyler, Nebraska
Johnson, A. V.	Muskegon, Michigan
Lincoln, R. A.	Dunbar, Nebraska
McCombs, D. W.	Omaha, Nebraska
McLaughlin, J. P.	Anaconda, Mont.
Marsh, F. E.	Omaha, Nebraska
Melcher, W. H.	South Omaha, Nebraska
O'Connell, Margaret	Grand Rapids, Minn.
Sample, C. B.	South Omaha, Nebraska
Schobel, F. V.	Bloomington, Nebraska
Seyfer, W. W.	LaJara, Colorado
Smith, H. R.	Omaha, Nebraska
Stava, A. T.	Bruno, Nebraska
Steinauer, Eulalia	Steinauer, Nebraska
Swoboda, F.	Omaha, Nebraska
Thompson, E. L.	Chadron, Nebraska
Toepfer, F. F.	Victoria, Kansas
Trepanier, C. T., Jr.	Grand Forks, North Dakota
Wineman, C. F.	Hartington, Nebraska
Zastera, B. R.	Howell, Nebraska
Bailey, T. M., Jr.	Rock Port, Missouri
Breetzke, O. F.	Wisner, Nebraska
Gaeth, A. F.	Schuyler, Nebraska
Greenberg, D.	Omaha, Nebraska
Johnson, L. A.	Omaha, Nebraska
Murphy, H. F.	Omaha, Nebraska
Murphy, J. B. H.	Omaha, Nebraska
O'Rourke, S. F.	Durango, Colorado
Quick, B. E.	Rock Port, Missouri
Shields, F. A.	Park City, Utah

JUNIORS.

Armstrong, L. L.	Sargent, Nebraska
Barry, J. F.	Blair, Nebraska
Beegle, Harry	Grand Island, Nebraska
Benson, B. H.	Fullerton, Nebraska
Campbell, R. G.	Los Arunios, Colorado
Cross, John	Orleans, Nebraska
Crowley, Leona	Cambridge, Nebraska
Cullen, J. J.	Rawlins, Wyoming
Curzon, Richard	Auburn, Nebraska
Garman, F. R.	North Platte, Nebraska
Grace, Jas.	Port Washington, New York
Graham, T. L.	Hanover, Kansas
Grapengiser, Bertha	Omaha, Nebraska
Havey, W. J.	Wood River, Nebraska
Hoffman, Fred	Denver, Colorado
Hughes, A.	Omaha, Nebraska
Hughes, M. V.	Newcastle, Wyoming
Jacobson, R. A.	South Omaha, Nebraska
Jensen, Agnes	Council Bluffs, Iowa
Kline, Dave	Omaha, Nebraska
Kulik, Milada	South Omaha, Nebraska
Lercher, C. L.	Arvada, Colorado
McBride, D. C.	South Omaha, Nebraska
McCabe, R. P.	Omaha, Nebraska
Manning, H. F.	Merna, Nebraska
McConnell, A. H.	Omaha, Nebraska
Monohan, F. J.	Hebron, Nebraska
Monson, E. P.	Council Bluffs, Iowa
Mulac, J.	South Omaha, Nebraska
Nigro, C. L.	Kansas City, Missouri
Norotny, B. L.	Clarkson, Nebraska
Peterson, A. A.	Lyons, Nebraska
Polansky, E.	St. Paul, Nebraska
Rutherford, C.	Aurora, Nebraska
Ryan, F. V.	Rawlins, Wyoming
Stevenson, L. E.	Franklin, Nebraska
Sullivan, A. J.	Omaha, Nebraska
Stein, D.	Omaha, Nebraska
Tecker, W. H.	Franklin, Nebraska
Vandas, Geo.	Omaha, Nebraska
Whitacre, G. A.	Crete, Nebraska
Winn, H. A.	Grand Island, Nebraska





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...The...
Creighton University
Bulletin

VOL. 8

MAY

No. 3

ANNOUNCEMENT
of the
COLLEGE OF PHARMACY
1916-1917



Published monthly from March to August by The Creighton University,
Omaha, Nebraska. Entered as Second Class matter, March 20, 1909,
at the Postoffice at Omaha, Nebraska, under the act of July 16, 1894.

Calendar

1916.

September 22-23—Friday and Saturday, Registration. Examinations to remove conditions.

September 25—Monday. Classes commence.

November 30 to December 2—Thursday to Saturday inclusive, Thanksgiving recess.

December 23 to January 1, 1917—Saturday to Monday, inclusive, Christmas recess.

1917.

January 22-25—Monday to Thursday, inclusive, First Semester Examinations.

January 29—Monday, Second Semester begins, 8 A. M.

February 7—Wednesday, Founders' Day, Holiday.

February 22—Thursday, Washington's Birthday, Holiday.

April 6-8—Friday and Saturday, Easter recess.

May 21-31—Monday to Thursday, inclusive, Second Semester Examinations.

May 30—Wednesday, Memorial Day, Holiday.

June 2—Saturday, Commencement.

Faculty

FRANCIS X. McMENAMY, S. J. The Creighton University
President of the University.

WILLIAM P. WHELAN, S. J. The Creighton University
Lecturer on Moral Principle in Pharmaceutical Practice,
and Supervisor.

I. CURTIS ARLEDGE, P. D. Creighton College of Pharmacy
Dean, Professor of Materia Medica and Botany.

JOHN E. O'BRIEN, Ph. C. Creighton College of Pharmacy
Professor of Chemistry.

H. C. NEWTON, Ph. C. Creighton College of Pharmacy
Professor of Theoretical and Practical Pharmacy.

PAUL L. MARTIN, A. M., LL. B. Creighton College of Law
Lecturer on Pharmaceutical Law.

T. BOLER, M. D. City National Bank Building
Lecturer on First Aids in Emergencies.

HERBERT GERALD, Ph. G., M. D.
. Creighton College of Pharmacy
Professor of Physiology.

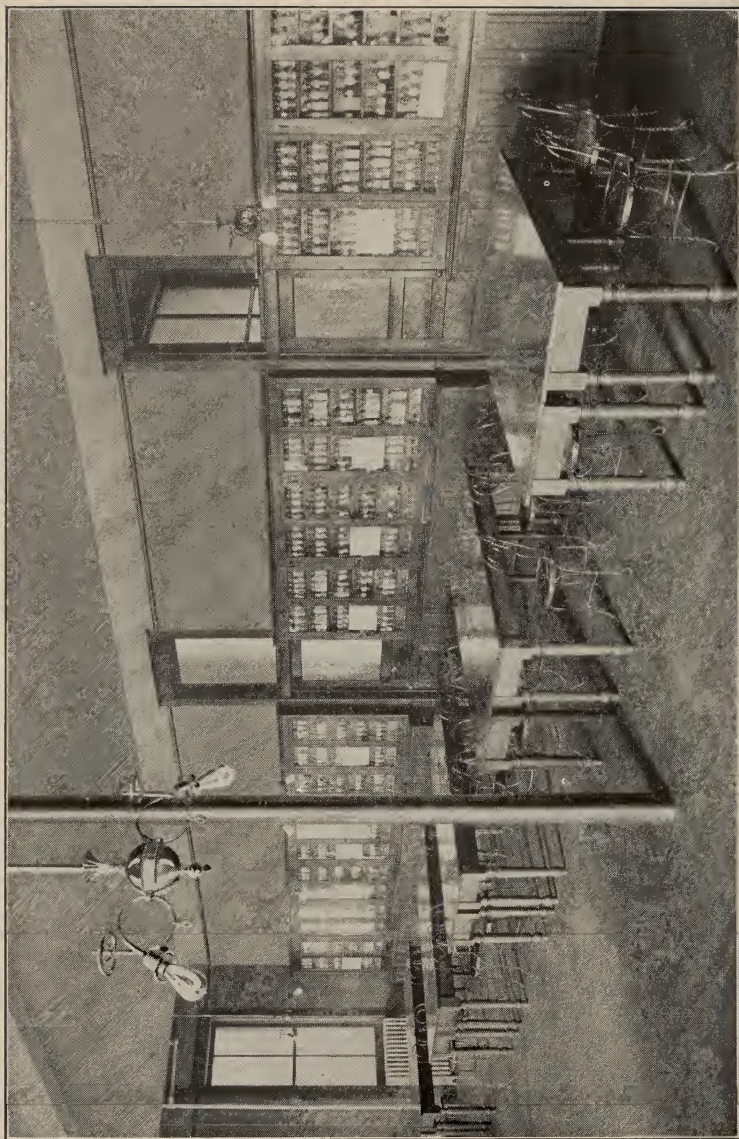
J. W. FORBING, B. S., Ph. C. Creighton College of Pharmacy
Professor of Physics.

L. A. JOHNSON, Ph. G. Creighton College of Pharmacy
Instructor in Pharmacy.

D. W. McCOMBS, Ph. G. Creighton College of Pharmacy
Instructor in Chemistry.



Creighton College of Pharmacy.



Creighton College of Pharmacy—Library and Museum.

Creighton College of Pharmacy

The Creighton College of Pharmacy, formerly the Omaha College of Pharmacy, became a part of The Creighton University September 1, 1905. The school has enjoyed a rapid growth from the first and now ranks with the leading colleges of pharmacy in the country.

The building occupied by the College of Pharmacy adjoins the Creighton Medical College on the west, and is located at Fourteenth and Davenport streets. It is one of the finest and most completely equipped buildings of its kind. It will provide ample accommodations for the growing school for many years to come. On the first floor is a lobby which is equipped with steel lockers for the use of the gentlemen students. The ladies' rest room is also on this floor. It is furnished with every convenience for the comfort of the lady students. The museum and library occupies the large room at the back of the first floor. The library contains a choice selection of standard books upon pharmaceutical and chemical subjects. It also contains a complete set of the reports of the American Pharmaceutical Association from the time of its organization in 1852. This is a complete library of pharmaceutical literature in itself. All the leading pharmaceutical and chemical journals are kept on file.

The museum contains collections of all the materials used in pharmacy. One of the finest collections in this room is one of every drug, chemical, and pharmaceutical preparation contained in the United States Pharmacopœia. It is literally the United States Pharmacopœia illustrated. This collection is open to the use of the students for study and much valuable information is gained from it.

On the second floor is a faculty room, two large lecture rooms, and a private laboratory for the use of the faculty only.

The third floor contains the general stock room and the pharmaceutical and chemical laboratories. These laboratories are fitted with every convenience for practical work and provide space for one hundred and forty students to work at one time.

There are some very strong features of this College which should be appreciated by all pharmacists and students of pharmacy. Foremost among these is the method of teaching—the laboratory method—admittedly the best method of instruction, but possible in only the foremost colleges. Here, besides lectures and recitations, the subjects themselves are studied, books being used as an aid and not studied as an end, in themselves. The faculty are men who have been actively engaged in pharmacy, both in the retail and wholesale trade and consequently are enabled to give the student the benefit of their experience. Although Creighton College of Pharmacy is one of the largest in this portion of the country, yet it offers to the student the maximum amount of personal instruction and students and instructors come into close contact with each other. Because of the generous endowment, superior courses can be given without increased cost to the student.

The idea of imparting practical knowledge, which dominates all the courses, can, perhaps, be best exemplified by mentioning the fact that during the last year nearly 12,000 bona fide prescriptions were compounded by the students in the free dispensary.

COURSE LEADING TO THE DEGREE OF GRADUATE IN PHARMACY.

This course includes two academic years of 32 weeks each. The school year begins the last week in September and ends the first week in June (see college calendar).

For admission to the course, the student must be at least 17 years of age, unless he is a graduate from a high school, in which case no age limit is required, and he must present written evidence, signed by the principal, superintendent, or registrar of the school which he attended, showing the successful completion of at least one year of accredited high school work. (15 Regent's counts of which at least 2 counts must be in English).

The course is arranged in a progressive manner. The subjects taken up at the beginning of the term lay the foundation for the subjects that follow. Although lectures are given daily, the students are required to study the lessons before they are taken up in class. Then by

question and explanation the instructor fixes the principles upon the student's mind in such a way that the knowledge he obtains is of practical benefit to him. All laboratory work is done under the immediate supervision of the instructors.

The training acquired qualifies the graduate to pursue successfully any branch of pharmaceutical work or ordinary chemical analysis.

COURSE LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

This course has been introduced to meet the demands of many who wish to qualify as Commercial Chemists or Food and Drug Analysts. Full four years of high school work is required for admission to this course. All who enroll in this special course take the regular work for the first two years and after successful completion of it, they are given advanced instruction in Bacteriology, Pharmacology, Manufacturing Chemistry and Food Analysis. Special attention is given to the analysis of food and drugs so that the student may be prepared to qualify for a position as government chemist.

CURRICULUM.

Junior.

- Inorganic Chemistry*, four hours per week for thirty-two weeks.
- Experimental Chemistry*, eight hours per week for sixteen weeks.
- Qualitative Analysis*, eight hours per week for sixteen weeks.
- General Pharmacy*, two hours per week for thirty-two weeks.
- Pharmacy Laboratory*, two hours per week for thirty-two weeks.
- Physics*, one hour per week for thirty-two weeks.
- Pharmaceutical Latin*, one hour per week for thirty-two weeks.
- Botany*, three hours per week for sixteen weeks.
- Botany Laboratory*, three hours per week for sixteen weeks.
- Pharmacognosy*, three hours per week for sixteen weeks.
- Materia Medica*, two hours per week for sixteen weeks.
- Pharmaceutical Arithmetic*, two hours per week for thirty-two weeks.
- Physiology*, two hours per week for thirty-two weeks.

Senior.

Pharmacy, three hours per week for thirty-two weeks.

Pharmacy Laboratory, six hours per week for thirty-two weeks.

Materia Medica and Toxicology, three hours per week for thirty-two weeks.

Pharmacognocny, three hours per week for thirty-two weeks.

Organic Chemistry, three hours per week for thirty-two weeks.

Quantitative Analysis and Drug Assaying, six hours per week for thirty-two weeks.

Special Dispensing in Free Dispensary, twelve hours per week for twelve or fourteen weeks.

Chemistry.

Pharmacy, like all professions, builds its foundation upon Chemistry, the latter science being as essential to Pharmacy as the telescope is to astronomy. It is the medium through which the embryonic pharmacist is enabled to look into the effects produced during the preparation and extraction of drugs and the testing and determination of their purity. The study as taken up is divided into Inorganic Chemistry, Organic Chemistry, Experimental Chemistry, Qualitative Analysis and Quantitative Analysis.

Inorganic Chemistry.

Inorganic Chemistry is studied in an elementary manner, but the entire scope of the Pharmaceutical Syllabus is covered and the work is based as much as possible upon the study of those elements and compounds with which the druggist deals. Particular reference is made at all times to those elements and compounds included in the United States Pharmacopœia. The course is given by lecture, recitation, and experiment. During the first few weeks, the lectures include the fundamental principles and theories of chemistry covering the study of atoms and molecules, atomic and molecular forces, physical and chemical changes, elementary and compound substances, etc. This work is followed by lectures and recitations on hydrogen, oxygen, nitrogen and some of the other non-metallic elements and their compounds, after which a study is made of the acids, metallic elements and their salts.

Experimental Chemistry.

This course is supplementary to the course in Inorganic Chemistry and consists entirely of laboratory work. Each student is assigned a desk in the laboratory and is equipped with sufficient apparatus to perform the experiments in the course. He is taught the proper use of apparatus and the necessary care in handling it. Particular attention is given to the neatness and care of the desks, this constituting a part of the credit given for the course. It is the intention of the instructors that the student shall prepare and study, in the laboratory, the compounds which are discussed the succeeding day in Inorganic Chemistry.

Qualitative Analytical Chemistry.

This subject, which was once almost overlooked and thought unnecessary by the pharmacist, now finds a very important place in the curriculum of every college of pharmacy. The pharmacist finds a knowledge of it necessary in testing the identity and purity of his drugs and chemicals.

The course is practically a laboratory course. The action of the group reagents upon solutions of all the common base-forming elements is determined by experiment. The bases are then classified into groups. The methods of separation of the bases of each group are studied in connection with solutions of known composition, and finally with unknown solutions. Full record is required for each step taken during the operation:—the reagent used, the result obtained, and equations showing each chemical change. Acid radicals are studied in the same systematic manner. The student is required to make a stated number of correct analyses before he is given credit for the course.

The course in Inorganic Qualitative Analysis is followed by work in Organic Qualitative Analysis. This course not only fits the student for practical analytical work, but rules and principles are developed which greatly aid in manufacturing chemistry.

Organic Chemistry.

The course in Organic Chemistry continues through the entire Senior year. It includes a study of the source of organic compounds, their properties, purification, proximate and ultimate analysis, determina-

tion of melting and boiling point, homology, isomerism, destructive distillation, combustion, decay, fermentation, determination of formula from results of analysis; structural, graphic and molecular formula, etc.

The organic substances are classified and studied under the following heads: Hydrocarbons, halogen derivatives of hydrocarbons, alcohols, aldehydes, acids, ethers,—simple and compound,—ketones, fats, soaps, carbohydrates, glucosides, cyanogen compounds, mercaptans, benzene and benzene derivatives as mono, di, and trihydroxy compounds, the aldehydes, acids, terpenes and their derivatives, diazo compounds, pyridin bases, animal and vegetable alkaloids, complex synthetic compounds as phenacetin, antipyrine and acetanilid, amines, amides and all other organic substances of pharmaceutical interest. Lectures on the commercial industries of sugar-making, brewing, soap-making, gas-making and fermentation industries are given at appropriate times during the course.

Special effort is made to base this course upon the United States Pharmacopœia.

Quantitative Analysis and Drug Assaying.

This course extends through 32 weeks of 6 hours of laboratory work per week. It includes the principles of gravimetric analysis precipitation, washing, drying, igniting, and weighing the products formed; the principles of the common forms of volumetric analysis, the principles and practice of making standard and empirical solutions, together with the choice and use of the proper indicators; the principles of alkaloidal estimation, and the extraction, purification, and quantitative determination, both gravimetrically and volumetrically, of these alkaloids. A strict observance of the rules for the use of balances is enforced.

Where possible, comparative gravimetric and volumetric methods are applied to the same substances in order to determine the utility of each method under varying conditions. The laboratory work is preceded by sufficient demonstrations and lectures to explain all the processes involved.

Pharmacy, Junior Course.

The class receives two hours' instruction each week including recitations and lectures. Emphasis is placed upon the recitation work, as

it enables the student to obtain a clear conception of topics not understood when first presented.

The lectures are closely related to the practical work which the student performs in the pharmaceutical laboratory. Two hours a week are devoted to this work in the laboratory. After an introductory lecture on the History and Progress of Pharmacy, the study of the United States Pharmacopœa is undertaken and its origin, development, method of revision, and legal status fully explained. The National Formulary, Dispensatories, and other pharmaceutical literature are discussed. Then follows a consideration of weights and measures, the various systems in use and their relation to each other, the construction, choice and care of a balance and the pharmaceutical application of specific gravity and specific volume.

Heat and its sources, regulation, and measurement with different systems of thermometers and the relations of the various systems of thermometric measurement are carefully considered, as are the processes of fusion, calcination, sublimation, distillation, evaporation, incineration, torrefaction, etc.

The comminution of drugs, levigation, elutriation, trochiscation, pulverization by intervention, solution, precipitation, filtration, colation, decantation, and similar processes are studied in detail. The methods of extraction by maceration and percolation are deemed especially important. Dialysis and crystallization are studied both in class and laboratory.

The balance of the Junior course is devoted to the study of the simpler galenical preparations like the medicated waters, syrups, emulsions, powders, pills, etc.

Pharmacy, Senior Course.

The Senior Course in Pharmacy is a continuation of the work of the Junior year. The course is comprehensive and thorough, as every class of official preparation is carefully studied, both in the classroom and in the laboratories. It includes a study of liquors, decoctions, infusions, mucilages, honeys, glycerites, elixirs, spirits, tinctures, wines, vinegars, fluid extracts, resins, oleoresins, collodions, emulsions, mix-

tures, pills, lozenges, confection, effervescent salts, cereates, ointments powders, triturations, liniments, oleates, plasters and suppositories.

The course also includes a careful study of the elements, hydrogen, oxygen, chloride, bromide, iodine, sulphur, phosphorus, carbon, boron and their compounds; also the compounds of sodium, potassium, lithium, ammonium, calcium, strontium, magnesium, aluminum, cerium, iron manganese, chromium, mercury, antimony, arsenic, bismuth, copper, lead, zinc, gold, silver, and also the organic substances; cellulose, starches, gums, sugar, the coal tar products and derivatives of the same, alcohols, fats, fixed oils, essential oils, organic acids, glucoses, alkaloids, neutral principles and the animal products. A few weeks are devoted to the study of the National Formulary and non-official preparations. The course closes with a thorough study of the prescription, the various kinds of incompatibility, solubility of ingredients, pricing, and abundant practice in the reading of difficult prescriptions taken from the actual prescription files of the city stores.

Senior Pharmacy Laboratory.

This course is supplementary to the class work in pharmacy. Each student is supplied with a full set of apparatus for carrying out all the important processes in pharmacy. The college furnishes all chemicals free of cost to the student. The work is carefully supervised by the instructor and assistants, who spend the whole period of laboratory work with the class, giving all necessary directions as to the best methods of manipulations, etc. It includes practice in the use of every form of pharmaceutical apparatus, such as thermometers, hydrometers, pycnometers, balances, burners, drying ovens, steam baths, water baths, distilling apparatus, etc., etc. The students are required to save a sample of each preparation, which becomes his property upon the completion of the course. Each sample is carefully inspected by the instructor, and if found to be unsatisfactory the student is required to repeat the process until a product is obtained which will meet every requirement. Every important pharmaceutical product as enumerated in the remarks upon the Course in Pharmacy is prepared in the laboratory. The most difficult ones of each class are chosen for preparation. The preparations which come more particularly under the head of extemporaneous pharmacy are studied in the course of Dispensing.

Dispensing.

This course is scheduled last in order to give the student the benefit of all the knowledge acquired in the previous course, in developing the most important and practical part of the pharmacist's art, the art of dispensing.

A careful study is made of the prescription as to its purpose, its parts and the proper course of procedure upon receiving a prescription. Extensive practice is given in reading and criticising prescriptions of every character. The student is also required to write a number of typical prescriptions. A great amount of practice is given in filling prescriptions involving difficulties of every kind.

Full instruction is given as to the proper selection, care, and use of all materials used in dispensing. Methods of weighing, measuring, pasting and labeling, wrapping, cleaning of utensils, arrangements of prescription case, etc., are all thoroughly taught by theory and by an abundance of practice.

Systematic instruction and an abundance of practice is given in making and dispensing the various kinds of mixtures, pills, emulsions, powders, suppositories, ointments, cereates, plasters, confections, lozenges, troches, cachets, konseals, hard and soft capsules, bougies, etc.

Most careful attention is given to incompatibility of every kind—therapeutical, pharmaceutical, and chemical—and the methods of overcoming the same.

Several days are devoted to the preparation of toilet lotions, cold creams, greaseless creams, massage creams, tooth pastes, and similar "private formula" preparations of especial interest to the retail trade. This course is supplemented by practice in our model prescription department, in which about twelve thousand actual prescriptions were compounded for the patients of the free dispensary of the Medical College last year.

Practical Prescription Work.

All the prescriptions written for patients at the free dispensary of Creighton Medical College are compounded by students of the College of Pharmacy under the supervision of instructors. The classes are divided into small sections and each section does this practical work for

a given period. Perhaps as great a variety of prescriptions is filled in this department each day as is filled in any one of the city stores, since a large number of the leading physicians of the city do work in the free dispensary. Students are required to make nearly all materials used in this department. It affords a large amount of practical experience which is of great value in business.

Botany.

In order to understand the descriptions of the vegetable drugs in the United States Pharmacopœia, the National Formulary, dispensatories and current literature, as well as other valuable works upon medicinal plants, a knowledge of Botany is not only desirable, but imperative for the well informed pharmacist.

To know how to handle vegetable drugs, preserve their quality, and convert them into useful products, much of their nature must be understood. A thoroughly trained pharmacist should not only be very familiar with the more commonly used drugs, but should be on "speaking terms" with every commonly used drug of medicinal value, growing in his locality. He should know how to identify unknown plants, make proximate analyses of these and be well informed of the possibilities of medicinal plant cultivation.

The course consists of three hours' lecture work and three hours' laboratory work each week for 16 weeks. The lectures cover enough of the life history of cryptogamic plants to show their relationship in structure and life history to the higher forms. The function, structure, and morphological character of the various organs and members are explained and some of the processes demonstrated by means of physiological apparatus.

The laboratory work is chiefly microscopical, acquainting the student with the common forms of cell and tissue structure, thus paving the way for the Pharmacognosy which follows. Official drugs are used for illustration when they are quite satisfactory, but much other material such as season and native species offer, are used.

Pharmacognosy.

This course is a continuation of the Botanical laboratory work. The plan of study is that of "Kræmer's Scientific and Applied Phar-

macognosy," which is used as a text. The official drugs as well as some important unofficial drugs are studied macroscopically and microscopically, both in the whole and powdered forms, with a view view to identification, detection of impurities, and adulteration. The course covers 48 weeks of three hours per week of laboratory work and explanatory lectures.

Materia Medica and Toxicology.

This is a lecture course supplementing the course in Pharmacognosy. It comprises 2 hours of lecture per week for 16 weeks in the Junior year and 3 hours per week for 32 weeks in the Senior year. The action, uses, preparations, doses, and other details not covered in Pharmacognosy are taken up. The general principles of Toxicology, symptoms, treatment, specific and general, are also included in this course.

The allied subjects, Botany, Pharmacognosy, Materia Medica, and Toxicology, include as far as possible, in a two-year course, all the important knowledge of plant life as it relates to the practice of pharmacy.

Pharmaceutical Arithmetic.

The course in Pharmaceutical Arithmetic extends through sixteen weeks, five hours per week, and is given in the Junior Course. The course is arranged to meet the needs of those whose mathematical training has been somewhat limited, and to give to all the necessary practice in solving problems which come up in the practice of pharmacy and in chemical analysis. The work is arranged in logical order and includes problems of weights and measures, specific gravity, specific volume, conversion and reduction of formulas, percentage problems of every kind, dilution and fortification, alligation, problems involving chemical formulate and reaction, and numerous miscellaneous problems. On the whole it is one of the most helpful courses given.

Physics.

This subject is taken up at the beginning of the Junior Year because of the important relation it bears to Chemistry and to Pharmacy. A knowledge of the elementary principles of Physics is essential to a clear understanding of these subjects. The principal topics treated are

matter, force, molecular theory of structure, states of matter, properties, weight, cohesion, adhesion, capillarity, diffusion, osmosis, dialysis. Mechanics of pressure, conditions of equilibrium, the barometer, pumps and condensers, Boyle's Law, the siphon, buoyancy, density and specific gravity. Under heat we study source, temperature, the thermometer and relationship of various thermometers, conduction, convection and radiation, changes in state as produced by heat as liquefaction, vaporization, distillation, sublimation, specific heat, etc. The important principles of light and electricity are also considered.

Latin.

No one can thoroughly understand the official nomenclature of the materials of medicine and pharmacy without some knowledge of Latin. It is also essential in correct prescription writing. No attempt is made to give a complete course in Latin, but the aim is to present the elements of the language in such a way as to enable the student to understand the structure of the Latin words, phrases, and abbreviations that are used in medicine and pharmacy.

The course is given immediately following the course in Physics and gives the proper foundation for the use of the language in the study of Materia Medica and Pharmacy. The course continues eight weeks. The text used is prepared especially for pharmacy and medical students, and contains no subject matter that is unprofitable for students of these subjects.

Analysis of Urine.

Such time is devoted to this subject as is sufficient to acquaint the student with the more common methods of identifying and estimating abnormal urinary constituents.

Physiology.

Every intelligent pharmacist should be acquainted with the structure and functions of the organs of the body. He may then better understand the action of drugs on the system. The relation between the action of drugs and Physiology is made clear to the beginner by teaching in con-

nection with the Physiology the action of such drugs as emetics, astringents, cathartics, carminatives, etc., as illustrations. Instruction is given by recitation and lecture. Only those parts of the subject considered of practical importance to the student are extensively taught. The subject is illustrated by specimens, manikins, and skeletons. Special lectures are given on hygiene by eminent doctors of the medical faculty.

First Aid in Emergencies.

In connection with the course in Physiology is given a course in "First Aid to the Injured." It is a natural thing for all to rush to the nearby drug store for assistance in case of an accident of any kind. Pharmacists should be familiar with the most simple and effectual means of handling all kinds of accidents until the physician can be procured. A course in "First Aid" is given in order to make the students familiar with the best methods of procedure. This course is given in the form of lectures and by practical illustration both in the college and in the hospital. What to do in case of "Bleeding," "Fractures," "Fainting," "Drowning," "Bites of Animals," "Poisoning," etc., receive careful study. This course is not intended to fit the pharmacist to take the place of the physician, but simply to teach him what should be done until the physician or surgeon can be obtained. The life of the injured very frequently depends upon what is done upon the immediate occurrence of the accident. This course meets a pressing demand and is pursued with the greatest interest and profit.

Special Work.

Students who are able to give only a portion of their time to their studies may take such branches as they desire and devote the remainder of their time to other work. Those who adopt this method will require a longer time to complete the course, but many will be thus enabled to take the work who otherwise would not be able to do so. No special course preparatory to State Board Examinations is given. Students will not be enrolled for less than full term; neither will they be permitted to take a State examination before the term for which they have enrolled has been finished.

Examinations.

Regular monthly examinations are held in each branch in addition to the drills and class tests that are given from time to time in the regular course of the work. Record is kept of these monthly examinations and these records form a part of the final standing of the student. These regular examinations are a great help to the student in giving him opportunity to use the knowledge acquired and in teaching clearness of expression. A final examination must be taken in every branch before credit will be given for the completion of that particular study.

Time to Enter.

All students should be present at the beginning of the session in September. Students who enter in September will finish the Junior Course the following June. They will have a vacation during the Summer months and take up the Senior Course in September, the second year. The Senior Course is completed in eight months, or about the first of June. Those who enter after the session has begun must take up all back work in order to receive full credit for the work of the course, otherwise they will receive credit for the actual time in attendance.

Requirements for Graduation.

Every person upon whom this college confers the degree of Graduate of Pharmacy must be of good moral character and have reached the age of eighteen, and have all previous conditions removed. Evidence must be furnished that the candidate has attended a full course in some reputable College of Pharmacy, the last school year of which must have been in this college, and they must satisfactorily pass all final examinations. An attendance of ninety per cent is required.

Text Books.

All students are required to own the following text books: Remington's Practice of Pharmacy, McPherson & Henderson's Chemistry, Schimpf's Volumetric Analysis, Prescott & Johnson's Qualitative Chemical Analysis, Sturmer's Pharmaceutical Arithmetic, Sturmer's Pharmaceutical Latin, Hough & Sedgewick's Physiology, Kræmer's Applied

and Economic Botany, Kræmer's Scientific and Applied Pharmacognosy, Wilcox's Materia Medica, Scoville's Art of Compounding, United States Pharmacopœia and the National Formulary.

Reference Books.

The following are valuable as reference books throughout the course: United States Dispensatory, King's American Dispensatory, Army's Principles of Pharmacy, Caspari's Treatise on Pharmacy, Dietrich's Pharmazeutische, and others of this type.

All text books may be obtained at the College.

Expenses and Deposits.

A Matriculation fee of \$5.00 is charged. This is payable but once and is never refunded. There is also a fee of \$10.00 per year covering general admission to the University Athletic Events, Glee Club Concert, Debate, College Play and subscription to the Chronicle, the University's official monthly publication, and Gymnasium. The tuition for the Junior Course is \$100.00, payable \$50.00 at the time of entrance and \$50.00 at the beginning of the second half of the Junior Course. The tuition for the Senior Course is \$60.00, payable at the beginning of the course. Students who have taken their Junior Course at other colleges are required to pay \$80.00 tuition for the Senior Course. Special arrangements may be made when it is not convenient to pay the tuition as indicated above. No laboratory fees are charged aside from a deposit of \$5.00 to cover breakage. Any unused portion of this deposit is refunded at the time the student leaves the school. The graduation fee is \$10.00, payable at least three weeks before Commencement.

No tuition is refunded, but in case a student is compelled to leave school before completing the term for which he has enrolled, credit will be given for the unused portion.

Employment.

The college will do all it can to secure employment for students who desire assistance. It will assist all who desire to defray a portion of their expenses while attending college in securing places to do relief

work in stores, to act as waiters in restaurants, hotels, etc. All who desire such positions will be accommodated.

Valuable assistance will be given the graduates in securing permanent positions for them. We have many more calls for competent help than we can supply.

Board and Room.

Good rooms and board may be had, together or otherwise, near the college at reasonable rates. A list of reliable places is kept at the college office, and students are assisted in finding satisfactory places. Those who come from a distance should not engage room or board before they come to the college unless they are acquainted in the city and understand fully the conditions.

Good rooms, including heat, light, etc., may be had for from \$1.00 per week to \$1.50 per week. Table board with private family will cost from \$3.00 to \$4.50 per week. Many students get board and room for \$17.00 per month.

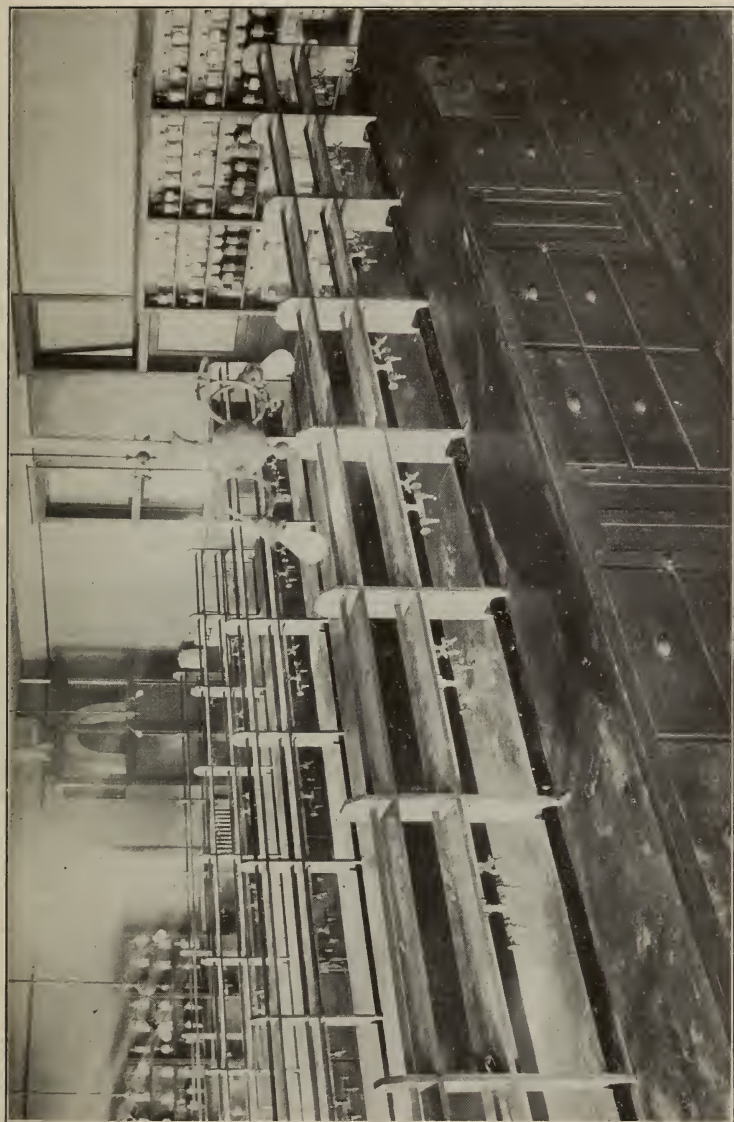
Special University Privileges.

Students of pharmacy may take advantage of several Literary, Debating and Oratorical Societies, conducted under the supervision of members of the University Faculty, and they may receive individual help, just as students of the Classical Department do.

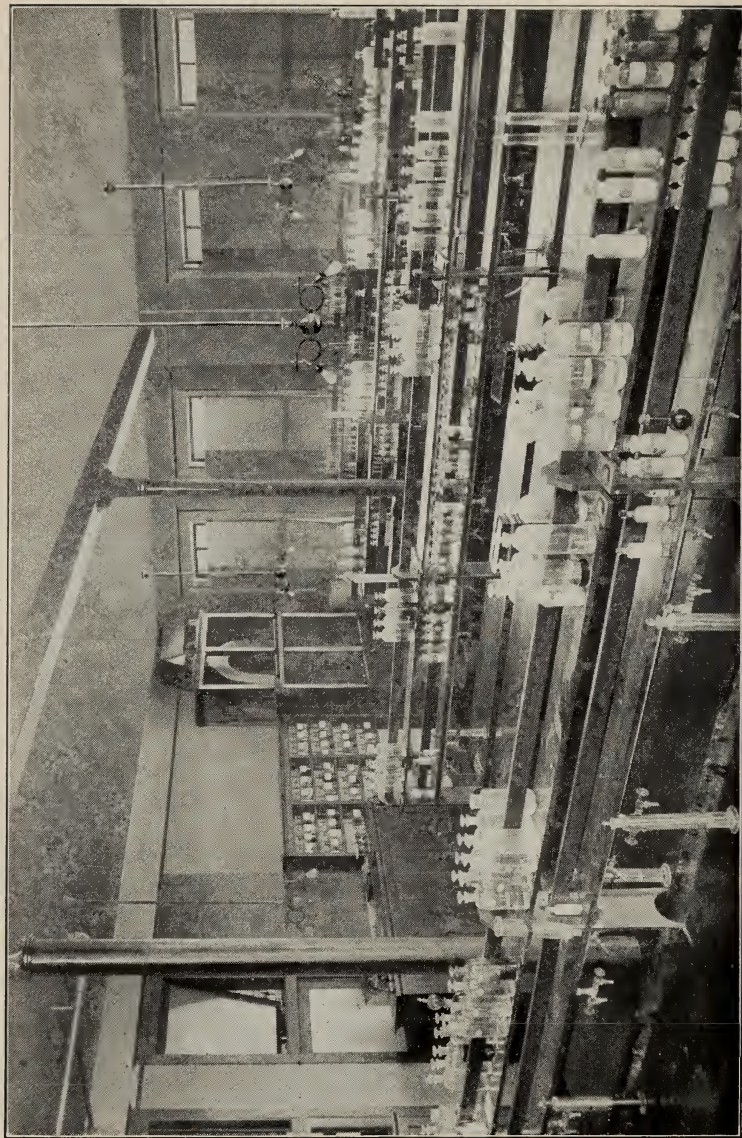
General Information.

To reach the college from the Union or Burlington Stations, take a Dodge street car and get off at Fourteenth street. Walk two blocks north to the college at the corner of Fourteenth and Davenport streets. The college is situated three blocks south and one block east of the Webster Street Station. Bring baggage checks to the college office and you can secure your room before having your baggage removed from the depot.

Students arriving in the city at night should go to some good hotel and report to the college next day. School is in session five full days in the week. The time required at school is from six to seven hours per



Creighton College of Pharmacy—Chemical Laboratory.



Creighton College of Pharmacy—Pharmaceutical Laboratory.

day, in recitation and laboratory work. Lessons must be prepared outside of these hours.

The State Board of Examiners usually holds its February examination at the college. This gives all the graduates who have had the necessary experience an opportunity of taking this examination without any inconvenience.

Students of the College of Pharmacy are welcome to take part in all athletic privileges offered by the University. They also have the privilege of using the large library of Creighton University and of joining the Orchestra, Band, Glee Club, and Choir.

Frequent visits are made during the year to many large manufacturing plants in the city. A great amount of practical information is gained by these visits.

For further information concerning the College of Pharmacy, address, The Dean, 14th and Davenport Streets, Omaha, Nebraska.

For information concerning the other colleges of the University, address—

The Dean, Creighton College of Law, 210 South 18th Street.

The Dean, Creighton College of Medicine, 14th and Davenport Streets.

The Dean, Creighton College of Dentistry, 210 South 18th Street.

The Dean, Creighton College of Arts, 25th and California Streets.

LIST OF STUDENTS 1915-1916.**Seniors.**

Armstrong, L. L.	Monohon, F. J.
Beegle, Harry	Monson, E. P.
Benson, B. H.	Mulac, J.
Bors, Fred	Nigro, C. L.
Crowley, Leona	Novotny, B. L.
Garman, F. R.	O'Rourke, S. F.
Grapengiser, Bertha	Peterson, A. A.
Havey, W. J.	Polansky, Edw.
Jacobson, R. A.	Rutherford, Chas.
Jensen, Agnes	Ryan, F. V.
Johnson, A. V.	Stevenson, L. E.
Kline, Dave	Sullivan, A. J.
McCabe, R. P.	Trumbul, Harry
Manning, H.	Winn, H. A.

Juniors.**Pharmacy 1915-16.**

Bryan, H. R.	Palen, H. J.
Carroll, J. L.	Peschek, A. E.
Colby, Ray.	Rapp, J. E.
Craig, D. C.	Reifenrath, I.
Finch, Alice	Schuhl, Albert
Fransco, Peter	Sheets, A. M.
Fuhs, Harry	Sly, E. L.
Gall, C. O.	Spittler, F. A.
Geist, O. E.	Stevens, C. E.
Goodrich, Everett	Stewart, Ralph
Grace, James	Stotts, Luke
Graham, R. L.	Swoboda, J.
Herath, Lewis	Toomey, J. P.
Hodek, Tresa	Timm, Wilbur
Kulik, Milada	Vermenlin, F. V.
Luschen, A. A.	Wadley, Melvin
Masengarb, G. F.	Walsh, Zita
McDonald, T. F.	Whitford, L. E.
Maloney, C. M.	Zevins, Sara
Meany, Loretta	

Specials.

Kavanaugh, P. D.	Vandas, Geo.
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